That's the great secret of creativity. You treat ideas like cats: you make them follow you.

— Ray Bradbury

CHAPTER – II

REVIEW OF RELATED LITERATURE
# CHAPTER – II

## REVIEW OF RELATED LITERATURE

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Researches on Creativity in General</td>
<td>29</td>
</tr>
<tr>
<td>2.2</td>
<td>Researches on Creativity in India</td>
<td>40</td>
</tr>
<tr>
<td>2.3</td>
<td>Researches on Creativity with Freedom</td>
<td>45</td>
</tr>
<tr>
<td>2.4</td>
<td>Researches on Creativity with Socioeconomic Status</td>
<td>50</td>
</tr>
<tr>
<td>2.5</td>
<td>Researches on Creativity with Family Structure</td>
<td>57</td>
</tr>
<tr>
<td>2.6</td>
<td>Researches on Creativity with Family Tension</td>
<td>61</td>
</tr>
</tbody>
</table>
CHAPTER – II

REVIEW OF RELATED LITERATURE

Review of the related literature allows the researcher to acquaint himself with current knowledge in that field. A careful review of the research journals, books, dissertations, thesis and other resources of information on the problem to be investigated is one of the important steps in planning any research study. It serves the following specific objectives:

1. To enable the researcher to define the limits of the study.
   Review of related literature helps the researcher to delimit and define the problem. The knowledge of related literature enables the researcher to state the objectives of the study very clearly and concisely.

2. To avoid useless problem areas.
   The researcher can select those areas for the research study which are useful and significant for the society.

3. To avoid unintentional duplication of well established findings.
   Review of related literature helps the researcher to acquire knowledge of the findings in that area so that the researcher can avoid the duplication of any study.

4. To get the appropriate methodology.
   After reviewing the related literature the researcher is enable to select the useful and appropriate research methodology for the study.

5. To know previous recommendations.
   The important reason for review of related literature is to know about the recommendations for further research given by the earlier researchers in that particular field.

2.1 Researches on Creativity in General

The review of creativity implies that it is reactive; and surely, it often is a reaction to problems or challenges. Yet creativity is also one of the engines of cultural evolution. Runco (2004) of Psychology Department, California State University, California, has reviewed some researches on creativity in the Annual Review of
Psychology, with various dimensions. Runco mentioned the following in the review studies:

Bruner (1962) claimed that we must encourage the creativity of our children and students as preparation for the future, given that the future is more difficult than ever before to define. Given the “greying of America”, it will come as no surprise that more and more research is exploring life span creativity. The research reviewed suggests that creativity facilitates late-life adaptations and growth (Cohen 1989; Dudek & Hall 1991; Runco & Charles 1997). This is especially true of the flexibility allowed by creativity, because older adults tend to rely on routines and, unless intentionally creative, become inflexible (Rubenson & Runco 1995).

Although a number of excellent studies of creative talents and creative persons were published before 1950, a great deal of credit is given to J. P. Guilford (1950). His presidential address to the American Psychological Association was titled “Creativity”, and his argument at that time, and his subsequent empirical efforts, went a long way toward convincing individual of the possibility of being scientific about the creativity. Guildford also argued convincingly that creativity was a vital “natural resource”.

Barron & Harrington (1981) devoted most of their review to (a) creativity in relation to intelligence, and (b) creativity and personality. The relationship between creativity and intelligence has been researched since 1981. Personality is also being studied, but many other influences on creative work have been identified. Some of these are tied to the individual’s potentials, dispositions, abilities and capacities and some are tied to the environment and social context. Runco reviewed the researches on creativity reflecting different disciplinary assumptions. He reviewed the behavioural perspective on creativity, researches on the biology of creativity, clinical, cognitive, developmental, economic, educational, historiometric, organizational, psychometric and social researches. These approaches overlap a great deal, and an interdisciplinary perspective is the best. Because several important topics do not fit neatly into either the alternative or the disciplinary categorization.

Amabile & Gryskiewicz (1989) and later Witt & Beorkrem (1989) identified the following “situational influences on creativity: freedom, autonomy, good role
models and resources, encouragement specially for originality, freedom from criticism, and “norms in which innovation is prized and failure not fatal” (Will & Beorkrem, pp. 31 – 32). Some influences can also inhibit creativity. These include a lack of respect (specially for originality), red tape, constraint, lack of autonomy and resources, inappropriate norms, project management, feedback, time pressure, competition, and unrealistic expectations. Murray (1998) identified the alpha and beta presses, one being objective and one being subjective. Competition is a good example of how these may differ, for competition may both stimulate and inhibit creative work (Watson, 1968); its impact depends on the individual’s interpretation. The same may hold true for resources, at least in the sense that creative insights may sometimes absolutely require resources, but sometimes result from paucity.

Time is indeed an important resource. Mednick (1962), for example, suggested that original ideas are remote and well removed from the original problem or initial idea. This remoteness requires time; it takes time to move from idea to idea and to find the “remote associate”. A number of empirical studies have confirmed Mednick’s (1962) predictions. Time is also important for incubation, though here it is time away from a task rather than devoted to it.

The role of press in the creative process also can be seen in the research on family background. Most work in this area seems to focus on family structure, in contrast to family process. The relevant structural variables include birth order, family size and number of siblings, and age gap. Sulloway (1996) for instance, presented data showing that middle children are the most rebellious, and are therefore potentially creative (Gaynor & Runco, 1992). Albert & Runco (1989) reported that the autonomy within a family, not just the number of siblings or family structure, could dramatically influence creativity. Very likely, family structure has an impact on development of creativity because it determines family processes. Larger families have more authoritarian parents, just to name one example of how structure can determine process.

Some recent research suggests that environmental designs for schools are conducive to creativity (Hasirci & Demirkan, 2003). Although it would be best to design an environment on an individual-by-individual basis, all other things being
equal, environments should allow independent work, be stimulating but not distracting and easy access to resources. These findings align well with those in the organizational setting (Amabile, 2003; Witt & Beorkrem, 1989).

The product approach to creativity focuses on outcomes and those things that result from the creative process. The assumption here is that studies of products (e.g., publications, paintings, poems, designs) are highly objective, and therefore amenable to the scientific method. Products can be counted, for example, and sometimes it is just the quantity of one’s efforts that is measured. The value of this approach is supported by the amazing productivity of Piaget, Picasso and other luminaries (Simonto, 1984). The problem with this approach is that it often informs us only about productivity and not about creativity. Also, it can be quite misleading because what it takes to be productive may differ from what it takes to be creative. An individual can be productive without being original and originality is the most widely acknowledged requisite for creativity. In methodological terms, productivity and creativity are correlated but not synonymous [Runco, 2004, pp. 661 – 663].

Sex differences can be explained in terms of family background, though biology is a strong influence as well. Sex differences are not always found in assessments of creativity, though historical analyses do uncover differences that may reflect bias and favoritism. There does seem to be a benefit in being raised in a psychologically androgynous fashion (Harrington et al., 1983) rather than as a stereotypical male or female. The androgynous individual may have more options available when solving problems, rather than just options that are stereotypically masculine or feminine, and he or she may be more flexible than the stereotyped male or female.

Early family experiences may help explain differences between boys and girls (Baer, 2003; Tegano & Moran, 1989), but it is also now clear that sex differences also reflect life span discrepancies between man and woman (Helson, 1990; Reis, 1999). Reis described how the developmental and career paths of women are more diverse than those of men. She also concluded that the relationships play a larger role in women’s creative efforts than in men’s creative efforts [Runco, 2004; p. 669].
Dudek et al. (1993) felt that socioeconomic status (SES) contributed to creative thinking during an individual’s developmental years, with higher SES being beneficial to creativity. Though “necessity is the mother of invention”, the alternative – that some necessities are common in lower SES levels and stimulate creative thinking – has not been supported empirically, at least not directly.

According to Runco (2004), the categories of research (i.e., person, process, and press and the disciplinary categories) suggest that in many ways creativity research has broadened its scope in the past 20 years. It is now more of an interdisciplinary effort than even before, and new techniques, topics and applications are apparent in the research. The field is also more focused and more selective. It is not easy to pinpoint exactly how it is selective. The selection that has occurred within the field may be best viewed as topical, and perhaps due to the current zeitgeist.

Feist & Runco (1993) examined researches published in the *Journal of Creative Behaviour* between 1969 and 1989. They found a decrease in the attention being given to personality and an increase in social research and educational studies of creativity. They also examined *Psychological Abstracts* for the 1980s and discovered that approximately 0.01% of the abstracts involved creativity and they also found that approximately 9000 works on creativity were published between 1960 and 1991.

Faizi et al. (2013) drew some principles on findings of their work titled “Design Guidelines of Residential Environments to Stimulate Children’s Creativity” published in Journal of Asian Behavioural Studies. The effective variables of their study were—

1. Stimulation of the natural environmental elements: The research showed that using of natural elements (water, light, and plants), the child’s curiosity and excitement for the play can be increased.

2. Child’s Play and Participation: This factor is associated by participation rate of children for any change in the space, for example, their participation in planting and maintaining flowering areas, drawing on the walls and their participation in changing the decoration.

3. Flexibility of functions: The purpose of flexibility is to provide one or more solution adapted to the context of the application in order to provide the ideal
solution. A space can be used proportionate with the function by changing spatial aspects of housing.

4. Curiosity: The purpose of curiosity is to encourage children to ask questions and learn. The children try to find the answers. The principles drawn from the findings of their study were:

Principle 1: “connectedness and continuity of open and closed spaces (natural spaces”).

Principle 2: “a free plan design form and presence of small walls or movable partition walls that children create places for themselves by help of their parents”.

Principle 3: “to create diversity by natural elements”. Natural landscape has a correlation with creativity potential. The existence of plants in the interiors helps in increasing creativity level.

Principle 4: “play making by natural elements”.

Using the aforementioned principles in designing the residential spaces can be prepared the base of increasing the curiosity and “play-participation”, and thus improving the child’s creativity by applying the variables such as “natural stimulus elements” and “flexibility of functions”.

Edwards (2012) mentioned some aspects of home environment in the study titled “A Family’s Role in Developing Creativity at Home.” Those were as follows:

- provide many possibilities for cooperative role-play that children can change at their whim.
- encourage children to create games with spontaneity, without family interference.
- always have materials and items available for children to engage in "secretive" play, such as a blanket thrown over an old card table.
- provide toys that promote creativity by allowing children to explore and discover, such as hard wooden blocks.

Olszewski-Kubilius (2001) explores parenting strategies in “The social and emotional development of gifted children: What do we know?” that seem to work best with gifted young people. It acknowledges that no child or family is the same but draws conclusions from commonalities that exist in the families of profoundly gifted young people who have been able to pursue their talents. It offers suggestions to
Chapter – II : Review of Related Literature

parents such as letting the child experience some stresses in life and also letting them make their own decisions.

Parents enact their values (Olszewski et al., 1987). They can demonstrate a love of work and learning. They make independent learning outside of structured or traditional activities and settings. They also make personality dispositions that are essential to talent development such as risk taking and coping with setbacks and failures. They demonstrate that success requires a great deal of hard work and sustained effort over long periods of time.

Another very important role for parents is helping their talented children build social networks that can give them emotional support for their abilities and talent development activities (Subotnik & Olszewski-Kubilius, 1997). Social networks consist of the people within a child's life and their interconnections. Size, memberships, and degree of interconnectedness among members affect the extent to which social networks are psychologically and physically supportive of an individual. The social world of the child begins with the family; but, over time, as higher levels of talent development are achieved, it expands to include teachers, coaches, mentors, and a wider scope of peers. Participation in special activities, such as competitions or after-school and summer programs, can augment and populate social networks with peers who provide specific emotional support for achievement in the talent domain. Friends and companions who are also involved in the talent field can be essential to sustaining commitment during critical times [Subotnik & Olszewski-Kubilius].

While research generally supports the positive role families can play in developing talent, the literature also suggests that different kinds of family dynamics yield different outcomes for children. Specifically, family dynamics greatly influence children's motivations to achieve or produce, and different patterns of family attitudes, behaviors, and parenting styles may create different kinds of motivations. Creatively gifted children are found to have families that stress independence, rather than interdependence, between family members; are less child-centered; have somewhat tense family relationships (ones with "wobble"); and have more expressions of negative affect and competition between family members, resulting in motivation toward power and dominance (Albert, 1978, 1983). High scholastic achievers come
from families that are cohesive and child-centered and where parent-child identification is strong, resulting in high levels of achievement motivation.

Studies suggest that an important family-environment factor is the degree to which the family creates an atmosphere where children are free to develop a unique identity and have their own individual thoughts and express them freely. Individuals who come from such families are more likely to be very creative, as well as highly competent, in their work. Such families foster creativity and intellectual risk taking. The circumstances within homes and families that create environments conducive to the development of independent identities and thought are many and varied. They include anything that results in a reduction in parent-child identification, an "emotional space" between parent and child, lower levels of parental monitoring of children, and less conventional socialization of children by parents. Circumstances cited in the literature that create this "space" include both negative ones, such as imbalanced parental or difficult family relationships, as well as more benign, typical circumstances such as parents who are less involved with children because they have interests or careers (Ochse, 1993; Olszewski-Kubilius, 1997). These conditions are thought to result in children being more independent, autonomous, and less sex-stereotyped. They also cause children to retreat from interpersonal relationships at home (if very difficult circumstances exist) or contribute to the development of a preference for time alone (if more benign circumstances exist), resulting in more time and opportunity for both practice and skill acquisition in the talent area and a rich internal fantasy life (Ochse, 1993; Simonton, 1992).

Although research on eminent individuals seems to suggest that family stress and unhappy childhoods can be major components of the process of producing a creative individual, are they necessary ingredients? Not according to Csikszentmihalyi, Rathunde, and Whalen, (1993), who talked about a balance of support and tension within the family as conducive to high levels of talent development and good mental health. They made the point that, because researchers studying families of talented individuals have lacked a conceptual classification for families with a balance of support and tension, they have simply not looked for or studied these kinds of families. These families provide contexts for children that are
both integrated (family members are connected and supportive of one another), yet also differentiated (there were high expectations from parents that individual children would develop their talents to the highest degree possible and encouragement of individual thought and expression). Such families produce autotelic personalities in children or individuals who are self-motivated and self-directed. According to Csikszentmihalyi, Rathunde, and Whalen, an overemphasis on one of these can result in individuals who are either highly talented and creative, but not well adjusted (primacy of differentiation), or very well adjusted, but not talented or creative (primacy of integration). It may be that the development of high levels of talent requires the motivation and characteristics born from childhood tragedy, possibly at the expense of good psychological development; other levels of both talent and mental health result from a more balanced blend of tension or challenge and support. Similarly, Therival (1999) also asserts that stress and tragedy are not essential elements of creative productivity. He offered a model of creativity that includes the following components: genetic endowment (G), parental or other "confidence building" assistances (A), and misfortunes (M). According to Therival, creativity can develop in individuals who experience great misfortunes as long as there are also great assistances present. He distinguished between creators who are dedicated (have high levels of genetic endowment, many assistances in youth, and no major misfortunes) and creators who are "challenged" (have high genetic endowment, some assistances, and some misfortunes). Both produce creative work, but the "challenged" personalities are more overtly driven to prove themselves and to receive recognition. Therival also noted that psychologically abusive childhood challenges that elicit anger are less likely to result in creativity in substantive work [Olszewski-Kubilius, pp.205-212].

Norah Al-sulaiman (2009) has done a study on “Cross- Cultural Studies And Creative Thinking Abilities” and he has drawn some valuable conclusions regarding sex difference, family environment and culture. The goal of the study was to provide answers to the following existing research questions by reviewing pertinent studies in the areas of creative development, gender differences, cultural values, family environment, and creativity measurements. These questions were:
1. Are there any differences in the creative development ability of individuals across cultures?
2. Are there differences between males and females in creative thinking across cultural studies?
3. Are there any differences between samples taken from different countries in terms of family environment and creative abilities (i.e. originality, flexibility, fluency, and elaboration, etc.)?
4. What measures of creative thinking differentiate the creative abilities in cross-cultural samples?

Coon (1969) examined gender differences in four cultures: the United States, Germany, Australia, and India. This study showed that in the United States, boys scored higher on originality than girls, while girls scored higher in figural elaboration. In all other samples, except those collected from India, gender differences were non-significant. In India, boys scored significantly higher than girls in figural originality. This study also involved a comparison of changes in performance between third and fourth grade, on figural, verbal, and total measures. The data showed that the United States sample showed more often a gain from the third grade to the fourth grade, while the reverse was the case for the sample from the other countries in the study, suggesting the importance of cultural factors.

Mar'i (1971) examined the influences of cultural differences and sex differences in creative thinking abilities. The study involved two samples of eighth grade students, one from modern American culture and the other from the Arab rural occupied territories (Palestine). Mar'i used forms Verbal B and Figural B of the Torrance Tests for assessment of Creative Thinking. His study showed that Arab female students lagged significantly behind boys on all measures of creativity, although male students showed greater variability in performance as compared to females. Within the American sample, no significant sex differences were found, except in fluency and originality on one problem only, and this was in favor of females. In general, the performance of American students was superior to students in the occupied Arab territories and the former showed greater individual differences than the latter. Mar'i explained that in a modern society, individuality is encouraged
and required while in traditional societies, individuality is punished. Further, her study
does not mention the stressful conditions that students endure in the occupied
territories, which clearly would impact the development of their creative thinking
abilities. He also mentioned that the family and the attitude and values of parents have
considerable significance in the emergence and development of creative thinking in
children, investigators have linked this influence to the degree by which culture
encourages or discourages creative thinking. Therefore, this extends into the way
parents encourage or discourage creative personality characteristics as they develop in
their children (Busse, 1967; Mackinnon, 1962; Mehrota and Sawers, 1989; Raina,
1980; Strom and Johnson, 1991; and Torrance, 1965).

Mackinnon (1962) indicated that a highly creative person comes from a special
kind of home environment, which facilitates the emergence of creative thinking. He
reported that he found in studying histories of a sample of highly creative architects
that certain aspects of their parents' attitude toward them as children was very
important in providing them with opportunities and even necessities in developing
qualities of creative performance later in life.

Torrance (1970) studied that six cultures (involving a sample of Black
American, White American, Western Australia, Western Samoa, Germany, and India)
demonstrated a noticeable reduction in creative thinking abilities of fourth graders. He
explained these phenomena by bringing attention to the way children, at about the
fourth grade level, are treated in these cultures and in terms of the kinds of behaviors
that are encouraged or discouraged throughout the culture. Furthermore, German,
Norwegian, Australian, and Indian groups tended to perform somewhat better on the
verbal than on the figural measures, while the Samoan and Black American children
functioned at a higher level on the figural measures.

Norah Al-sulaiman lastly concluded that the cross-cultural research which have
been reviewed for this study confirmed the effects of the culture on creative thinking.
Most of the studies indicated that there are significant differences between countries
and cultures on creative abilities: originality, fluency, flexibility, and elaboration.

Siddiqi, S. (2011) has published a paper on her research work in Indian
Educational Review titled “A Comparative Study of Creativity among Boys and Girls
of Class VII” where she wished to investigate differences for boys and girls in terms of the relation between different aspects of creativity. A sample of 50 boys and 50 girls studying in two secondary schools of Aligarh city was randomly selected. The investigator had personally met the participants and administered the tool. Torrance Test of Creative thinking (Verbal Form A) designed by E. P. Torrance (1968) was used. Mean S.D.s and T-test were calculated to analyse the data. The findings reveal that boys do not differ significantly in all the variables of verbal creativity, except the measures of originality from the girls.

Jinzhen et al. (2004) have done a study on Creativity development and family environment. Using creativity test as task and 310 school students aged from 9 to 16 as subjects, this study explored the development of children’s creativity and the effect of family environment on creativity. The findings of this study were: (1) Children’s creativity increases with their age. But the development of its three dimensions fluency, flexibility and originality – is unbalanced. Compared with other age cohorts, the fluency and flexibility dimensions of creativity develop faster during the age of 9 to 11 years old; (2) Family environment has not only a direct influence but an indirect influence is done via creative attitude.

2.2 Researches on Creativity in India

In India, creativity research is very scanty. It is only in the sixties that researchers in this country began taking any serious interest in this new field.

Creativity research in India had its beginning in 1956 when Bhattacharya conducted a study where he reported that high creatives possessed shallow feeling for life, high sensitivity and ability for logical thinking. Later in 1960, he said that there were two types of creative persons; of those one are those who are born creatives and the others who have acquired creativity. The Indian research on creativity was further advanced by researchers like Raina (1968), Parmesh (1969), Mehdi (1971), Passi (1971), Goyal (1973), Arora (1974, 1978), Pandey (1980), Sharma (1985), Sarkar (1994) and Gupta (2004).

The first research study in the area of creativity submitted for a formal degree of the University of Calcutta was done by Manas Roychaudhuri (1963). This clinically
oriented investigation attempted to lay base the differential psychologic, social-
environment and developmental variables that characterised creative talent in music. As Mitra (1975) points out, research in the subject has been receiving serious attention only very recently. Research is relatively new and much remains to be accomplished. According to Raina (1975), what seem to be lacking in much of the work, with some notable exceptions, is preciseness, clarity and maturity of judgement.

In India, it seems that researchers have not been prolific and much has not yet been accomplished in terms of quality and quantity when compared to international contributions. The number of Ph. D. studies rose from 5 (in 1965–1972) to 67 (in 1975–1982). This is indicative the growth of interest in the subject and of the field. However, the number of Ph. D. studies comes down in the years 1983–1987 to 39, which is somewhat surprising. At this stage, it can be asserted that, in India, creativity research has gained popularity and is no longer elementary and fragmentary as was observed in 1971 [Raina, 1975].

Raina (1980) reported several sex differences in creativity over a 10-year period in India. In 1959, boys in India had shown a consistent superiority on both the verbal and figural tests. Retesting a decade later revealed that the advantage in both verbal and figural creativity had shifted in favour of girls. Raina (1966) conducted a study of creative development in Delhi, India to find out the socio-cultural influences on creative thinking development. He found few differences between boys and girls in the first and second grades, but obtained rather consistent and significant differences between male and female on both the verbal and figural tests from the third grade through the sixth. It is interesting that the results obtained in two different areas (Ajmer and Delhi) are consistent with the results of Torrance's (1966) studies from various parts of the United States, considering that the Indian culture places emphasis on language skills and male superiority. For example, boys in Ajmer and Delhi surpassed girls in the verbal section of creative thinking after grade two. Raina related this result to differential treatment of sexes and the identification of children with sex roles of their culture.

Sarkar, P. (1994) has done a study entitled “A Study of Rural Children : Their Personality Pattern and Creativity”. He has found that sex was a contributing factor to
creativity and its different components, i.e., boys and girls mostly differ from one another on the scores of creativity and its different components. He also found that boys are superior to girls on the scores of creativity and its components.

Panda (1997) in his study, “Impact of creativity and adjustment on academic achievement”, found positive and significant correlations between academic achievement and creativity.

Goel (2004) investigated the effect of home environment on educational aspirations. The sample of the study comprised 100 students (50 boys and 50 girls) of intermediate classes in age groups of 16-20 years. The results revealed that girls had much higher educational aspiration than boys. Boys felt more rejected with the autocratic atmosphere at home in comparison to girls who experienced more nurturance than boys.

Pande & Nanda (2005) conducted a study to find the impact of different environment of nursery school on the school readiness of children. The sample comprised of 60 children attending different level of quality of nursery school education in terms of school environment (good/average/poor). The children were taken randomly from 12 nursery schools of Ludhiana district in Punjab. Results revealed that good school environment improved the level of school readiness of children.

Gupta P. K. (2006) published his valuable research work as a book titled “Education for Creativity : Training, Research and Implication” where he described how the creativity be developed in the VI grade students by giving training. Experimental Design was adopted in the study. Components of both verbal and non-verbal creativity were the dependent variables and Treatment Condition, Intelligence Level and Sex were the independent variables for the study. The Factorial Design was applied for analyzing the data. Major findings of the study were:

- There was no significant interaction of the level of intelligence with Creativity Training Programme on the development of verbal fluency, flexibility and originality.
- Creativity Training Programme is equally effective for both male and female in developing their verbal fluency, flexibility and originality.
Tongper, R. M. (2006) has done a research work on creativity titled “A Study on Creativity among Secondary School Students of Shillong” for Ph. D. degree from North-Eastern Hill University.

Objectives: The major objectives of the study were:

- To determine the divergent production abilities of the secondary school students.
- To study the scientific creativity of the secondary school students.
- To find the differences in the various creativity dimensions by sex, community and types of management.

Sample: 1000 secondary school students studying in class IX were drawn as sample from various secondary schools of Shillong. The sample comprised of 401 males and 599 females drawn from 30 secondary schools all over Shillong.

Methodology: Mean, S. D., Quartile deviation, Skewness and Kurtosis were calculated for the results. At same time ‘z’ values and Pearson’s Product moment Method of correlation were applied in the study.

Major Findings:

- No significant difference was observed between male and female secondary school students in their divergent production abilities. But a positive difference was found between the tribal and non-tribal students in that abilities.
- A significant difference was observed between male and female secondary school students in their verbal scientific creativity. But no difference was found between the tribal and non-tribal students in verbal scientific creativity.
- A significant relationship between curiosity and scientific creativity was observed.
- Again, a significant relationship between divergent production abilities and mental imagery was found in the study.

Mukherjee M. (2007) has taken 250 students of class XI and XII of English medium school as sample for her study for Ph.D. degree titled “A study of Creativity in relation to Need-achievement, Manifest Anxiety and Level of Aspiration”. She has found that boys do not differ from girls on the fluency, flexibility, originality and elaboration of both verbal and figural creativity.
Neelam (2008) in her study on 630 students of eleventh class studying in higher secondary schools of Jammu division concluded that positive significant correlations exist between home environment and emotional competency of students.

Richa Sharma (2011) has done a research work on the relationships between environments (both School and Home) and creativity of children. The objectives of the study were:

1. To find the creativity level of government and private secondary school children.
2. To find the creativity level of boys and girls.
3. To find the difference in the creativity of children due to creative stimulation dimension, cognitive dimension and permissive dimension of school environment.
4. To find the creativity level of children with rich and poor home environment.

Sample: The study was conducted on a random sample of 200 ninth class students of Chandigarh. The sample comprised of 100 government school students (50 boys and 50 girls) and 100 private school students (50 boys and 50 girls).

Tools used: The following tools have been used in this study
1. Non-Verbal Test of Creative Thinking (Mehdi, 1985)
2. School Environment Inventory (Mishra, 1984)
3. Home Environment Inventory (Mishra, 1989)

Results:
1. The school environment of government and private schools of Chandigarh did differ with respect to Creative Stimulation, Cognitive Encouragement and Permissiveness dimensions of school environment but did not differ significantly with respect to Rejection, Acceptance, and Controlled dimensions.
2. The government schools of Chandigarh provide greater creative stimulation to their students as compared to those studying in the private schools. Whereas students in the private schools feel greater rejection in there schools as compared to those in government schools.
3. As regards the comparison of creativity of the school students with their school environment, it can be concluded that the government schools of Chandigarh have higher creativity generating environment as compared to private schools of Chandigarh.
2.3 Researches on Creativity with Freedom

According to the Business Dictionary, ‘Freedom’ may be defined as the Right to express one’s ideas and opinions freely through speech, writing, and other forms of communication but without deliberately causing harm to others’ character and / or reputation by false or misleading statements.

Freedom emphasizes the opportunity given for the exercise of one’s rights, powers, desires or the like. Freedom consists two dimensions – in mind and expression. These are associated with one’s thought and action of freedom.

Garnett (1960) mentioned in his speech in American Philosophical Association that in any list of the things of man value, especially in this twentieth century and on this side of the iron curtain, freedom is found to stand high. By many it would be mentioned as the first and most fundamental value in the life of man. Yet of its nature and conditions we are far from sure. By the term “creativity” I refer to a type of movement or change which is manifest only in living things, but is characteristic of them. It is productive of new form and order, of increasing variety or differentiation of form together with increasing elaboration and combination of forms, of increasing harmony, order and efficiency.

Children are born and brought up in the family and they are influenced by the family environment. They may get different degree of freedom in their thinking and different actions. Here, mainly parental child rearing practices are responsible for creating different levels of freedom. Nijhawan, H. K. (1972) used the test on Child Rearing Practices in her research study titled “Anxiety in School Children”. She had selected High Anxious (HA) children and Low Anxious (LA) children from the sample of 720 students. She found that more parents of High Anxious (HA) children than of Low Anxious (LA) children favour the statements (structures towards, punishment, aggression, developing dependence) regarding parents’ unquestionable authority over children, keeping children under strict discipline and beating the child for misconduct. They also believed that children should be helped in the little difficulties of life and that they should not hide anything from their parents. Mothers and fathers of HA children showed more discrepancy between their attitudes than those of LA children. Again, more of HA mothers used beating or rejection as a
measure of disciplining the child than LA mothers. Fathers of LA children communicate with their children more than fathers of HA children.

Philip & Johnson (1988) mentioned some important statements in their study, “Freedom and Constrain in Creativity”.

1) Creativity is a mystery, and many people believe that it should remain a mystery. It should not be scrutinized too closely, says the anxious romantic, because there is a danger in knowing too much about it. If we discover its sources, they may dry up. The cynical realist asserts a different proposition.

2) The nature of free will for to be creative is to be free to choose among alternatives.

3) The problem of free will and the problem of creativity are, in some respects, one and the same. They can both be solved together.

4) We are free not because we are ignorant of the roots of many of our decisions, which we certainly are, but because we know that we can choose how to choose, and we know that among the range of options are those arbitrary methods that free us from the constraints of any ecological niche or any rational calculation of self-interest.

5) Creativity depends on arbitrary choices and thus on a mental device for producing, albeit imperfectly, non determinism.

6) Creativity is like murder – both depend on motive, means and opportunity. Society has, dramatic effects on the creation of works of the imagination.

7) Creativity yields products with three characteristic properties:
   a) They are novel for the individual who creates them.
   b) They reflect the individual’s freedom of choice and accordingly are not constructed by rote or calculation, but by a non-deterministic process.
   c) The choice is made from among options that are specified by criteria.

Olszewski-Kubilius (2001) mentioned in the study that the family creates an atmosphere where children are free to develop a unique identity and have their own individual thoughts and express them freely. Individuals who come from such families are more likely to be very creative, as well as highly competent, in their work. Such families foster creativity and intellectual risk taking. The circumstances within homes and families that create environments conducive to the development of independent
identities and thought are many and varied. They include anything that results in a reduction in parent-child identification, an "emotional space" between parent and child, lower levels of parental monitoring of children, and less conventional socialization of children by parents. Circumstances cited in the literature that create this "space" include both negative ones, such as imbalanced parental or difficult family relationships, as well as more benign, typical circumstances such as parents who are less involved with children because they have interests or careers (Ochse, 1993; Olszewski-Kubilius, 1997). These conditions are thought to result in children being more independent, autonomous, and less sex-stereotyped.

Murray, B. (2002) mentioned the statement of Dr. Teresa Amabile in the article, “A ticking clock means a creativity drop” in American Psychological Association. When the pressure's on, people produce--so the conventional wisdom goes. That may be true for making widgets, but it's not the recipe for producing creative ideas, said social psychologist Teresa Amabile, Ph. D., the Edsel Bryant Ford Professor of Business Administration at Harvard Business School, in a 2002 APA Annual Convention talk. In her studies of creativity in corporate America, she has found that the more workers feel crunched, the less likely they are to solve a tricky problem, envision a new product line or have other such "aha!" experiences that qualify as innovation And workers don't tend to realize this, said Amabile, often assuming that the harder and longer they have worked, the more creative they have been. Time pressure quashes creativity, Amabile posits, because it limits people's freedom to ponder different options and directions. "Think of it as the way you might enter a maze and explore for a solution," she said. "With increased time pressure, you take the simplest pathway, not one that's elegant or creative. But if you're able to spend more time exploring the maze, you're more likely to hit on exciting or new solutions." That's the pattern Amabile found among 177 highly educated employees in seven U.S. chemical, high-tech and consumer-products companies.

Tibetan spiritual leader the Dalai Lama (2010) has 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. And for this, there should be a sense of global responsibility, a feeling of oneness for all beings”.

Creativity is the freest form of self-expression. There is nothing more satisfying and fulfilling for children than to be able to express themselves openly and without judgement. The ability to be creative, to create something from personal feelings and experiences, can reflect and nurture children’s emotional health. The experiences children have during their first years of life can significantly enhance the development of their creativity.

All children need to be truly creative is the freedom to commit themselves completely to the effort and make whatever activity they are doing their own. What’s important in any creative act is the process of self-expression. Creative experiences can help children express and cope with their feelings.

Children need plenty of opportunities for creative play and creative thinking. Start by providing activities that are based on the children’s interests and ideas.

Barker (2011) in his research study has given another view. According to him, Freedom is often associated with creativity, yet recent work in the decision making literature suggests that too much freedom can be paralyzing when it provides too many choices. In the study, 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. The findings of the study suggest that while some amount of choice is important for encouraging creativity, too much can be counterproductive, which runs counter to many popular theories of creativity.

Kim (2011), Professor of Education at the College of William and Mary, analyzed scores on a battery of measures of creativity—called the Torrance Tests of Creative Thinking (TTCT)—collected from normative samples of schoolchildren in kindergarten through twelfth grade over several decades. According to Kim’s analyses, the scores on these tests at all grade levels began to decline somewhere between 1984 and 1990 and have continued to decline ever since. The drops in scores are highly significant statistically and in some cases very large. In Kim’s words, the data indicated that “children have become less emotionally expressive, less energetic, less talkative and verbally expressive, less humorous, less imaginative, less
unconventional, less lively and passionate, less perceptive, less apt to connect seemingly irrelevant things, less synthesizing, and less likely to see things from a different angle.” According to Kim’s research, all aspects of creativity have declined, but the biggest decline is in the measure called Creative Elaboration, which assesses the ability to take a particular idea and expand on it in an interesting and novel way. Between 1984 and 2008, the average Elaboration score on the TTCT, for every age group from kindergarten through 12th grade, fell by more than 1 standard deviation. Stated differently, this means that more than 85% of children in 2008 scored lower on this measure than did the average child in 1984. Kim herself calls it the “creativity crisis,”

Creativity is nurtured by freedom and stifled by the continuous monitoring, evaluation, adult-direction, and pressure to conform that restrict children’s lives today. In the real world few questions have one right answer, few problems have one right solution; that’s why creativity is crucial to success in the real world. But more and more we are subjecting children to an educational system that assumes one right answer to every question and one correct solution to every problem, a system that punishes children (and their teachers too) for daring to try different routes.

“Paradoxically, creativity theories on the tension between freedom and constraints”, 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”.


Steidle and Werth describe six experiments which provide evidence for their thesis. The key one featured 114 German undergraduates, who were seated in groups of two or three in a small room designed to simulate an office. The results is that those
in the dimly lit room solved significantly more problems correctly than those in the brightly lit room. They also felt freer and less inhibited than their intensely illuminated counterparts. Participants in the bright and the conventionally lit rooms did not differ significantly from one another on either scale. “These results indicate that dim illumination heightens perceived freedom from constraints, which in turn improves creative performance,” the researchers concluded.

2.4 Researches on Creativity with Socioeconomic Status

According to Wikipedia, Socioeconomic status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family’s economic and social position in relation to others, based on income, education, and occupation. When analyzing a family’s SES, the household income, earners' education, and occupation are examined, as well as combined income, versus with an individual, when their own attributes are assessed.

Again, according to Mosby's Medical Dictionary, the definition of Socio-economic Status is the position of an individual on a social economic scale that measures such factors as education, income, type of occupation, place of residence, and, in some populations, heritage and religion.

Max Weber (1947) distinguishes between ‘Class’ and ‘Status’. By class, he means a person’s market situation, which depends mostly on whether he owns property or wealth. Market situation, he asserts, determines income and the life chances which depend on this. By status, Weber, means social honour and social esteem; and he believes that more acquisition of wealth is not by itself status groups. Thus, status is intricately related to some reputation, or prestige or so.

Chaplin (1928) defined Socio-economic Status as : Position an individual or a family occupies with reference to the prevailing average standards of cultural possessions, effective income, material possessions and participation in the group activities of the community.

For practical empirical purposes, Ogburn and Nimkoff (1972), suggested that a classification of population into social status groups based on occupation was most
useful. They thought, occupation was closely related to income and education and to attitudes, beliefs and style of life.

In practice, SES of a family is determined on the basis of information about, location; type and conditions of dwelling house; nature of occupation; amount and source of income; education, material possession; cultural ecology of home – participations in social group, organization, recreational activities; extent of land owned, wealth etc., caste, religion etc.

Lichtewalner & Maxwell (1969) measured the creativity of 68 middle and lower class Caucasian children attending a nursery school, kindergarten, or day-care centre by an object-identification originality test. The Mann-Whitney U test was employed to analyze differences, with a confidence level of 0.05. Firstborn and only children were significantly more creative than later-born children. Middle-class children were significantly more creative than lower-class children. It was concluded that enrolment in a pre-school programme alone is not sufficient to increase the creativity of lower-class children to the level of their middle-class peers.

Ogletree & Ujlaki (1973) conducted a creativity study in England, Scotland and Germany, which included 1,165 primary school children. Results showed that creativity scores (using the Torrance Tests of Creative Thinking) were a function of socio-economic background. In all countries, children of upper class families obtained significantly higher creativity scores (verbal and non-verbal) than the children of middle and lower class families. The same significant difference was evident in middle class children to lower class children. This was true when analyzed within countries, by age, grade and sex. There was no evidence to support the contention that youngsters of lower class backgrounds performed better on non-verbal tasks than their higher class peers, although they did make a better showing on the non-verbal tasks than on the verbal tasks.

Keenan & Victoria (1978) have done a research on creativity. They wished to determine the relationship between the sixth grade student’s creativity in art and certain socio-cultural and community factors.

A questionnaire was used to gather the socio-cultural information. A battery of three tests was used to determine each child’s creativity in art. The instruments used
were the Barron-Welsh Art Scale, the Paper Shapes, and Torrance’s Test of Creative Thinking Figural Form A. The dependent variable in this study was a composite score of creativity derived from the scores of the individual tests.

Sample: The 340 students involved in this study were enrolled in the sixth grades of fourteen public elementary schools in North Texas and Central Texas during the 1968-69 school year.

Findings: An analysis of the data revealed there was no significant difference in the creativity of the sixth grade student as a function of the size of the community in which he lived or his socio-economic group membership.

There was no significant difference in creativity of the three ethnic groups, Negro American, Latin American and Anglo-American, as evidenced by the composite score of creativity and the scores of the Paper shapes test and the Barron-Welsh Art Scale, Torrance’s test indicated Anglo-American and Latin American students tended to have an advantage over Negro American students with regard to those factors (fluency, flexibility, originality and elaboration) which this test purports to measure. No relationship was found to exist between the student’s creativity in art and maternal occupational status or church activity.

Miller & Gerard (1979) reviewed some research works and their opinions were stated as – “Family influences on the Development of Creativity in Children : An Integrative Review”. Sample and measurement differences are considered in resolving discrepancies and integrating the findings. Social class is positively related to children’s verbal creativity, but findings are mixed when nonverbal assessments are used. Younger children who are distant from sibs in age tend to be less creative. Other birth order findings are inconsistent. Gender differences in creativity are absent in most samples of very young children, but differences appear and widen developmentally, with older girls doing better on verbal tests and older boys on figural tests. Parents of creative children tend to feel personally secure and be highly competent. Relationships between creative children and their parents tend to be neither overly close emotionally, nor hostile and detached, but marked by respect, independence and freedom.
Biswas, P. C. (1988) has done a research titled, “Reactions to Frustration in School Children” for Ph. D. degree from Kalyani University. The sample was 904 students of High Schools, of Class VI, VIII, X where 424 boys and 480 girls in the sample. The findings were that SES has effect on types of aggression, directions of aggression and superego factors and patterns. He mentioned that the enriched learning and cultural environment fostered by the High and the Middle SES homes, presumably, have conditioned the children in such homes to grow comparatively mature and socialized at least in handling frustrating situations. However, more absolute study involving other related aspects of home environment, marital adjustment of parents, child rearing practices etc. and their interactions on the reactions to frustration elicited by adolescents, is required to gain better understanding of influence of S. E. S. on the dependent variable concerned.

Bradley & Corwyn (2011) believe that Socioeconomic Status (SES) remains a topic of great interest to those who study children’s development. This interest derives from a belief that high SES families afford their children an array of services, goods, parental actions, and social connections that potentially redound to the benefit of children and a concern that many low SES children lack access to those same resources and experiences, thus putting them at risk for developmental problems. The interest in SES as a global construct persists despite evidence that there is wide variability in what children experience within every SES level, despite evidence that the link between SES and child well-being varies as a function of geography, culture, and recency of immigration, and despite evidence that the relation between SES and child well-being can be disrupted by catastrophes and internal strife. This Study provides an overview of the association between SES and children’s well-being for three major domains of development(cognitive, socio-emotional, health).

Mankar et al. (2011) have done a research work titled “Creativity in children as function of parent occupation and socio-economic status” in International Multidisciplinary Research Journal, where they established the relationships among creativity, parent occupation and socioeconomic status. They think that creativity appears early in a life and its shows in the child’s play. Gradually it spreads to other area of life. Studies of creative production of men and women, showed that creativity
normally reaches its peak during the thirties and the either remain on a plateau of gradually declines. Some children are subjected to environmental factor that result in satisfying their creativity at these period while other children of the same age are not.

The attempts were made in the present investigation to correlate the creativity in children with their parent occupation and socio-economic status, as it was assumed parent in good financial condition can adequately satisfy the need of children to enhance their creativity. Creative thinking was also considered their different occupation, have different effect on family life and creativity of children.

The investigation was carried out at various schools in Akola. Children ranging from 10 to 15 year were also tested on socioeconomic status scale. For measuring creativity of the student and socioeconomic status of parents, the standardized creative thinking test by Mehdi (1973) and socioeconomic status scale by Rajeev Bharadwaj (1980) were administered respectively.

Surprisingly the result of present investigation explain that socio-economic status and occupation of parent are showing insignificant correlation with the creativity of children \(r=0.03833\). There is no impact of parent occupation on their children’s creativity \(r=0.05158\). The figure shows negative and insignificant correlation. Hence concluded that creativity is an independent phenomenon, which is not related with any occupation or availability of material things. Creativity is a potential and can developed through positive reinforcement & motivation in children.

Venu Gopal Rao & Satyapal (2011) have found out some results from their research work. According to them, creativity comes out when Mind, Heart and Hand (Action) work together, mind is store of idea and takes interest to act on the ideas. Physical Body is store of energy, mind is store of ideas and heart is store of emotions. It means “Ideas + emotion + energy = creativity. Creativity is ability to create or invent something new and original ability to solve problem. The creativity is an ability to recognize how the best process of developing new, rare or unique ideas. Creativity is an ability to distinguish how the best practice and unusual ideas can be applied in different situations.
Sample: A sample of 300 students studying at Post Graduation level in different academic streams has been gathered. While picking the respondents due care has been taken to make the sample representative of the universe of the study.

Results:

- There is significant difference in the flexibility dimension language creativity of male and female. Male performed better than female. It means gender play an important role to expose creative potential.
- There is significant difference in the flexibility dimension of language creativity of Rural and Urban. Urban performed better than Rural. Thus residence affects the creative ability of individual.
- There is significant difference in the flexibility dimension of language creativity of type of families (Nuclear and Joint). Nuclear Family students performed better than Joint.
- There is no significant difference in the flexibility dimension of language creativity on mother occupation (H. W. and in-service).
- There is significant difference among scheduled caste students on father occupation on Flexibility Dimension of Creativity. Those students are more creative whose fathers are businessmen than whose fathers are in private job, government job and laborers.
- There is significant difference among scheduled caste students on Family income, on Flexibility Dimension of Creativity. High income families’ students performed better than lower income families.

Saha (2012) has done a research work titled “Creativity in relation to Socio-economic Status in Secondary School Students in West Bengal” where he wished to provide information and relation between creativity and socio-economic status in West Bengal, India. Data were collected through TTCT for creativity and socio-economic status scale of Kuppuswamy of 100 secondary students of Birbhum District in West Bengal, by randomly. The result revealed that 1) Creativity is positively related with socio-economic status, 2) boys and girls students do not differ significantly in their creativity, 3) boys and girls students are not differ with regard to socio-economic status.
According to Niwas and Punia (2013), Creativity is journey of human being’s dissatisfaction to satisfaction. Every creative work is a reflection of human mind and aesthetic sense. Aesthetic sense is related with beauty. Beauty of world depends upon beauty of mind because every beautiful creation is product of mind and mind does so when it feels dissatisfaction and hunger to find something new, highly creative people can do this type of task. The survey method was used in this study. 300 post graduate schedule caste students were considered as a sample. The sample was selected randomly. The data were analysed using mean, SD, t-test and F-test. The findings of the study were (1) there is highly significant difference in scientific creativity (fluency, flexibility and originality) of male and female, rural and urban, SCI and SC2. There positive relationship is found among parent’s occupation, parent’s education, family income, academic stream and scientific creativity.

Parsasirat et. al. (2013) found out the relationship between Socioeconomic Status and Creativity in their study titled, “Effect of Socioeconomic Status on Emersion Adolescent Creativity” in Asian Social Science. In this study family economic status, father’s education and mother’s education were the three dimensions of socioeconomic status. This exploratory correlational research study examined the relationship between family economic status, father’s education and mother’s education with adolescent creativity. The sampling method was employed to select the proportion of participants using stratified and multi-stage cluster random sampling. The population of the sample was 546 high school students in Education Region 4, Tehran. The participants, 249 males and 297 females, completed two questionnaires. The adolescents completed a Demographic Characteristics Questionnaire and Abedi Creativity Questionnaire, which were used as the measuring tools in this study. The results show a significant positive correlation between family economic status and creativity (p < .01), and between parent education and creativity (p < .01). Interestingly, the analyses revealed a strongly significant positive correlation between parent education and creativity (p < .01), although none was found between males and females on creativity.
2.5  **Researches on Creativity with Family Structure**

According to Wikipedia, a family is defined as a group of people affiliated by consanguinity (by recognized birth), affinity (by marriage), or co-residence/shared consumption. Members of the immediate family may include a spouse, parent, brother and sister, and son and daughter. Members of the extended family may include grandparent, aunt, uncle, cousin, nephew and niece, or sibling-in-law. Family is defined as a specific group of people that may be made up of partners, children, parents, aunts, uncles, cousins and grandparents. Again, organization of a group of objects or persons may be called as a structure.

Ogburn and Nimkoff (1972), a family is a more or less durable organization of husband and wife, with or without children or a man or woman alone, with children or sometimes with grand parents, relatives, in-laws, grand-children, etc. and this composition of a family may be termed as family structure. Thus, family structure is not fixed, it varies in different cultures.

Psychologists and social psychologists, by family structure, mean family environment and emphasized that the mode of discipline imposed by parents in child rearing practices constitute the family structure. Hurlock (1974), for example, summarized three categories of family structures (environment): autocratic, democratic and permissive. This classification was, how discipline was enforced in an attempt to socialize the youngsters in the family. Authoritarian method is characterized by the use of strict rules and regulations, not considered to explain why the rules are important to children to enforce the desired behaviour. Democratic method emphasizes the need for discussions, elaborations, explanations, and reasoning to help the youngster understand why he is expected to behave in the desired way rather than another. In permissive method the child learns more by trials and errors than by guidance and there is lack of discipline, rewards and punishment from the part of the adults, particularly parents.

According to Minuchin (1974) “Family structure is the invisible set of functional demands, that organizes the way in which family members interact”. He argues that the transactional patterns regulate family members but these are maintained by systems of constraints. The first is ‘generic’ that involves the Universal
rules governing family organization e.g., power hierarchy in which parents and children have different levels of authority. The second constraints is idiosyncratic that characterizes mutual expectations of a particular family member.

Biswas, P. C. (1988) mentioned in his research work that a modern family generally consists of the mother, father and their children, there emerged various approaches to the measurement of family variables, particularly family structure by emphasizing relationship between parents, presumably on the basis of the concept of group dynamics. In these approaches, husband-wife power relationships (Hoffman, 1960), division of functions between husband and wife (Blood 1958, Hoffman, 1960), division of certain child rearing function between parents (Henry, 1956), have been considered as possible criteria for family structure and family tension (disagreement between husband and wife in executing such functions). Majority of these approaches sought information regarding these functions from the children on the supposition that children are a better informant about such things than the parents.

Following this modern approach Herbst (1952) opined that information about ‘who did’ and ‘who decided’ about the various common household activities, might constitute a significant aspect of family environment, which he termed as ‘family structure’ and the extent to which disagreement between parents did exist in decision making might constitute ‘family tension’. Hereby ‘who’ he meant ‘who amongst the parents’. Of course, these information would be supplied by children, because he, presumed, parents might tend to give a picture of greater mutuality and co-operation than the actually existed. In actual practice he gave more emphasis on the factor of ‘decision making’ than the factor of ‘doing’. He designated five dimensions of family structure namely, Father-dominance, Mother-dominance, Autonomic, Syncratic cooperative and Syncratic division of functions. More discussion of these dimensions have been made in Section 3.8.4 of Chapter III.

Nichols (1964) got the important findings from his study. Child rearing attitudes of the mothers of 796 male and 450 female high-ability high school seniors were assessed with the Parental Attitude Research Instrument, which was scored for three factors : Control, Hostility-Rejection, and Democratic Attitudes. Children of these mothers were assessed with a variety of inventory scales, self ratings, interest
and activity check lists, high school performance measures, and teacher ratings. Only the Authoritarian-control factor had correlates exceeding chance expectancy. Authoritarian Child rearing attitudes of the mother were negatively related to measures of the creativity and originality of the child, but, were positively related to academic performance.

Biswas, P. C. (1988) found that Family Structure was considerably related to reactions to frustrations and the mode of decision making rather than mode of taking actions about family activities, may presumably, determine the reaction patterns of frustration in the adolescence stage. On the whole, these findings buttressed the line of thinking expressed by Hoffman and Lippit (1970) who presumed that the relationship between mother and father may have significant impact upon the behaviour of children and adolescents.

Strom et al. (1994) mentioned in their study, “Support for Creativity in Early Adolescence” that diversity in family structure may diminish the quality of life for children. Large scale studies comparing single-parent and intact families were reviewed using several indicators of child well-being such as adequate income, emotional health, physical safety, academic achievement, and successful relationships. The ways creative abilities support adjustment and success were also considered. Matching groups of fifth and sixth graders (N=72), half from single-parent homes and half from intact families, were compared on the Torrance Tests of Creative Thinking. No significant differences in originality, fluency, flexibility and elaboration were found between the child groups from different family structures.

Falci (1997) found in his thesis that the effects of family structure on children can be mediated by the family processes occurring within families, such as the quality of parent-child relationships. The psychological wellbeing of children from six family structures were compared. After controlling for family processes and background variables the majority of the effects of family structure on children’s psychological well-being disappeared. Only children from stepfamilies had significantly lower levels of psychological well-being than children from intact homes. Stepfamilies, however, are a very complex family form and this research could not account for the possible unique processes occurring within stepfamilies. Finally, children from divorced homes
did not have significantly lower levels of psychological well-being even before family processes and background variables were controlled.

Vandewater and Lansford (1998) found in their study “Influences of Family Structure and Parental Conflict on Children's Well-Being” that relative effects of membership in one of two family structures (married-never divorced vs. divorced-not remarried) and interparental conflict (high vs. low) on children's well-being (internalizing, externalizing behavior, and trouble with peers) are existed for a sample of 10- to 17-year-old children and their parents from the National Survey of Families and Households (N = 618). Findings support the hypothesis 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. Analyses of child gender indicated that parental warmth toward the child mediated the relationship between conflict and well-being for girls. For boys, both conflict and parental warmth were directly related to well-being independently.

Conway & Li (2012) have done an important research titled “Family structure and child outcomes: a high definition, wide angle ‘snapshot’” in which they used data from the National Survey of America’s Families (NSAF). The research investigated the relationships between a highly defined set of family structures and a broad set of child outcomes at a particular point in time in a child’s life. A detailed classification of family structures is constructed that clarifies key differences among various types of diverse families, and facilitates equivalencies testing and pairwise comparisons across nontraditional family structures. The NSAF contains a large number of observations for less common, but growing, family structures such as single-father families, grandparent-headed households and cohabiters, which makes such detailed analyses feasible and allows further stratification by child age, gender and race. The data also contains information on child behavioural, educational and physical health outcomes, as well as extensive household characteristics, economic resources and parental behaviors and inputs. Results suggest that differences across nontraditional family structures are particularly prominent for child health outcomes and that the gender of the resident parent is empirically important, more so than the presence of a cohabiting
or married step-parent. Children in single father families have lesser access to health care yet enjoy better health outcomes than those in other families, even after controlling for economic resources (and inputs). In contrast, few differences are found between grandparent-headed families and other non-parent families.

Musick, K. (2012) mentioned in the study, “Are both parents better than one?” that family structure, parent conflict, transition to adulthood, and parenting are now frequently discussed. Introducing the differences between a two parent household opposed to a single parent household influences a minor in terms of education, sociology, and commitment. It has been documented that parents who argue often have children that reflect low academic achievement or success. Also, if the relationship of the parents determines the outcome of the child’s well-being, is a single parent home a better environment for that child’s ability to gain knowledge and excel in school? This article portrays the contradiction of two parent households being a healthy environment for a child opposed to a single parent household being a great environment for the academic success of a student. Also, information based on the parent’s participation in their child’s activities plays a vital role in their child’s academic success.

2.6 Researches on Creativity with Family Tension

The word tension comes from Latin root ‘tendere’, which means to stretch, and tension occurs when something is stretched either physically or emotionally. Sometimes ‘tension’ and ‘stress’ are used as similar meaning. Stress is usually caused by any kind of emotional or physical stimulus or situation. Most often, people speak of varied types of stress like relationship stress, work stress, or parenting stress. Children may be affected by stress in the contemporary world. Family tension is mainly arisen from the disagreement of opinions between the parents about various activities of the family.

Nijhawan(1972) applied the Family Questionnaire on the sample to assess the Family Tension and found out the influence of it on the score of anxiety. The findings were that High Anxious boys reported significantly more tension between their parents than the Low Anxious boys. But the results were not significant for girls. She
explained on the basis that girls are more defensive than boys on these matters perhaps because girls identify themselves with their parents more than boys do.

Economic and Social Research Council (2013) mentioned that researchers found that the way in which children understood the conflicts between their parents had different effects on their emotional and behavioural problems. Where children blamed themselves for the conflicts between their parents, they were more likely to have behavioural problems, such as anti-social behaviour.

But if their parents' fighting or arguing led to a child feeling threatened, or fearful that the family would split up, the child was more likely to experience emotional problems, such as depression.

The impact of everyday conflict between parents on their children's behaviour and mental health is driven by how the children understand the problems in the relationship as well as the nature of the conflict itself, the researchers found. These disagreements include; hostile relationships between parents, poor parenting practices, negative parent-child relationships and maternal depression.

Dreyer and Wells (1966) have done the work “Parental Values, Parental Control, and Creativity in Young Children” where they investigated the family climate in which creative behavior in young children develops. Measures involved the instrumental-expressive orientation, role tension, and degree of autonomy-granting of the parents of more and less creative children. Twenty-four middle-class children, ages four and five, and their parents were selected for study. The parents of high-creative children had less domestic value consensus and more role tension than the parents of low-creative children, reflecting an emphasis on individual divergence and expression of feeling. There were no significant differences between parents of high-and low-creative children in their degree of autonomy-granting.

Biswas, P. C. (1988) found that family tension over decision making about household activities was proved to have substantial influence on the reaction patterns of adolescents’ frustration as also revealed by the findings of other studies in other contexts. For example, Baruch, D. (1997) found that tension over sex, lack of consideration, insufficient expression of affection, the ascendance-submission relationship and inability to express feelings were related to maladjustment in the
child. There may arise another question, who would be more affected, adolescent boys or girls? In this context, it was found that the influence was stronger on girls than on boys; (Toby, J. 1957), presumably due to the fact that the adolescent boys were generally less supervised and enjoyed more freedom to get along with peer groups than girls.

Olszewski-Kubilius (2001) explores parenting strategies in “The social and emotional development of gifted children: What do we know?” that family-environment factor that appears to play an important role in creating the motivation for high levels of achievement is stress or challenge. Stress is a broad concept that is difficult to define. It may be a highly individualized experience--what is very stressful or challenging for one person may be only moderately so for another. Researchers have speculated on the role of stress in engendering powerful motivations to succeed, specifically on how individuals may strive to achieve in order to acquire admiration and affection from others and compensate for unmet or unfulfilled psychological needs, to ameliorate rejection, or to prove that they are worthwhile (Ochse, 1993). "A stressful setting can become the catalyst for potentially talented individuals to meet their deficiency needs for attention, love, and approval through D (deficiency)-creative efforts providing self-expression and rewards" (Rhodes, 1997, p. 260). Stressful family circumstances may propel a child to seek refuge in safe, controllable intellectual activities or to use a creative activity as an outlet for emotions (Ochse, 1993, Piirto, 1992), and they may force an earlier psychological maturity for the child (Albert, 1978, 1980). Childhood challenges may prepare individuals to cope with the intellectual tensions and marginal existences that are characteristic of highly creative people (Feldman, 1994; Gardner, 1994). Some individuals turn stressful or difficult childhood events into positive challenges that motivate them to "right a wrong" or solve a broader social problem through their adult work and careers (Csikszenunihalyi, 1990).

Zlata Vasasovs (2010) has done the research work titled “Creativity and its Relation to Stress Perception” where the aim was to analyze and to explain into more details the relations between creativity and stress situations. Creativity is understood in the professional literature as every man psychical manifestation enabling him/her to
create new and useful values. Every creative activity is influenced by a lot of factors determining the creativity level. Considering perused sources of basic factors determining creativity, we consider there to be personality features including cognitive processes, domain or skill, individual’s expertise, individual’s developmental stages and social conditions also within our work. The results were (i) The highly creative students considered their health problems as the most frequent stress situations, and their anxiety states and friendships are perceived as being stressful the least. (ii) The low creative students perceive the most stressful situations related to their faculty environment and outcomes during their study. They are being stressed the least by their anxiety states and unexpected situations.