CHAPTER I
CHAPTER I

INTRODUCTION

1.1 EARLY CONCERN FOR CREATIVITY

Creativity has been a subject of systematic psychological studies since three decades only. But occasionally the problem has found place in the psychological literature under various terms like 'Productive Thinking', 'Imaginativeness' etc. from the very beginning of scientific psychology. Psychologists like J.P. Guilford, C.W. Taylor, E.P. Torrance, L.L. Thurstone, F. Barron and D.W. Mackinnon are considered to be the pioneers in stimulating research of the present form in the field of creativity.

In 1950 J.P. Guilford (Barron, 1969) in his presidential address before American Psychological Association expressed,

"I discuss the subject of creativity with considerable hesitation, for it represents an area in which psychologists, whether angels or not have feared to tread" (p.5)
Later on, three national conferences held in 1955, 1957 and 1959 at the University of Utah may be regarded as the harbinger to further researches in this field. By the 70's research in this area acquired a great momentum in number, quality and dimensions of the problem.

The Indian investigators also came forward. Raychowdhury (1962) worked for his doctoral dissertation on "An investigation into the personality structure of musicians". He has conducted a number of studies either alone or in collaboration with others. He may be called the pioneer of creativity studies in India. His research activity was further advanced by some scholars like Raina (1968), Passi (1971), Goyal (1973), Lalithamma (1973), Gakhar (1975), Chakrabarti and Kundu (1976-77), Jha (1978) and many others.

1.2. DEFINITIONS OF CREATIVITY

With the increase in concern for creativity there is ostensibly a tendency of having increased variation in the views on the term itself. Therefore, a large number of definitions naturally emerged and need to be discussed in order to have a clear concept of creativity.
1.2.1. **Creativity - A multifaceted Phenomenon**

According to Vinacke (1979), Ghiselin (1963) and Zimmerman (1964), it is difficult to give a single definition of creativity to the satisfaction of all, as the term 'Creativity' includes various meaning.

Commenting upon the definition of creativity Guilford (1965a) observed:

"'Creativity' like 'love' is a many-splendored thing. Small wonder that few have ventured to define it. At a conference on creativity a few months ago, each of the thirty-odd members was asked to write a list of his free associations to the word 'Creativity'. The results were almost as varied as the personalities of those present" (p. 439)

With the same voice Mackinnon (1979) explained creativity as a multifaceted phenomenon:

"Many are the meanings of creativity. Perhaps for most it denotes the ability to bring something new into existence, while for others it is not an ability
but the psychological processes by which novel and valuable products are fashioned. For still others, creativity is not the process but the product. Definitions of creativity range all the way from the notion that creativity is simple problem solving to conceiving it as the full-realisation and expression of all of an individual's unique potentialities. One would be ill advised to seek to choose from among these several meanings the best single definition of creativity, since creativity properly carries all of these meanings and many more besides. Creativity is, indeed, a multifaceted phenomenon." (p. 19)

So it may not be possible to reach a universally accepted definition of creativity. Not only common-men but psychologists also are not unanimous about the real nature of creativity. Different psychologists have given different definitions from different angels. To somebody creativity is process, to others product, still to others person or press or so on. Actually, if we consider deeply we shall be able to realize that this is not the high time to get a single definition. Because
it is only about three decades ago when psychologists began to deviate from the idea of considering intelligence as the prime ability behind all kinds of problem solving and adaptive behaviours. And after that they tried to unveil the mysteries of creative functioning of the mind. So we may expect that in near future an encyclopaedic embodiment of all the ideas and concepts related to creativity would be possible when a more commonly accepted definition would emerge through debate and discussion.

At present we shall discuss and consider some meanings and prevailing definitions of creativity in order to reach, at least tentatively a definition of creativity significant for the present investigation.

1.2.2. **Novelty - An Important Criterion of Creativity**

In the dictionary of psychology edited by Warren (1934)* the term 'creativity' has been explained as:

"the capacity of certain individuals to produce compositions of any sort (works of art, mechanical devices etc.) which are essentially novel or which were

previously unknown to the producer"
(p. 64)

May (1959) defined creativity in the following words:

"Actual creativity I define as the process of bringing something new into birth" (p.57)

In the Dictionary of Psychology (Drever, 1964)* the term 'Creative' contains the meaning:

"... producing an essentially new product constructive (somewhat wider)...

Similarly psychologists like McDowell and Howe (1941), Hutchinson (1949), Lehrman (1960), Kelman (1963), Kneller (1965) and Barron (1969) have given stress on 'novelty' as necessary component of creativity.

McDowell and Howe (1941) defined creativity as productive imagination, that is, the ability to produce 'something virtually new'.

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* Drever, James 1964 A Dictionary of Psychology (Revised ed.)
Hutchinson (1949) defined creativity in the following way:

"By creative effort I mean the initiation and execution of some work of literature, art, music or science which is essentially new to its author" (p. 97)

Creativity has been defined by Lehrman (1968) as the:

"finding of a new unity in the variety of nature". (p. 82)

Kelman (1963) has also given stress on novelty in defining creativity. Kelman (1963) defined creativity in terms of bringing into being that which did not exist before.

According to Barron (1969) creativity is:

".... the ability to bring something new into existence...." (p. 10)

The essence of all such definitions lies in the fact that creativity refers to such characteristics or abilities of man as to make him work out something novel and that was never done by anybody earlier.
Psychologists like Hutchinson (1949) and Kneller (1965) consider creative product merely by newness to the creator himself. To them, in case of considering creativity, it matters little whether the thing has been created by anybody earlier. But the investigator thinks that in order to be recognized as a creator one must work out something which will be novel at least for a certain group of people and over a certain period of time. The bigger the group of people and longer the time, greater is the creation. In this connection the comment of Stein (Taylor, 1964) is remarkable. He suggested that:

"(creativity) results in a novel work that is accepted as tenable or useful by a group at some point in time". (p. 6)

Also, newness of the product to the creator himself will not denote creativity properly. Product should be significant or worth-while. Following are some definitions which include purposefulness or significance of creative product with uncommonness or novelty.

1.2.3. Purposefulness or Constructivity

According to Piers, Daniels and Quackenbust (1978) creative product should be worth-while or significant. The definition constructed by them is as follows:
"Creativity is the capacity of the individual to avoid the usual routine, conventional ways of thinking and of doing things and to produce a quantity of ideas and/or products which are original, novel or uncommon and which are workable. It must be purposeful or goal directed". (p. 40)

Giving stress not only on 'novelty' but also on 'constructivity' Barron (1969) comments:

"Creativity is energy being put to work in a constructive fashion". (p. 8)

1.2.4. **Creativity - Completion of Pattern**

Some Gestalt psychologists observed creativity from their own psychological standpoint. According to Wertheimer (Harriman, 1951)*, Wheeler (1929) and Koffka (1935) invention means the completion of a pattern which was previously recognised as being incomplete.

Wertheimer (Harriman, 1951) defined creative thinking in comparison to reasoning that reasoning is the reorganisation of isolated experiences in terms of a goal. Creative thinking on the other hand, is the successful

transportation of a member of one configuration to another.

In this connection we may refer to the comments of Arasteh (1968) who defined creativity in comparison to intelligence. According to him:

"Unlike practical intelligence (the process of attaining a necessary goal through trial and error), creative imagination transcends the threshold of consciousness and is a visionary quality wherein man becomes aware of a unit of life and makes an effort to actualize it". (p. VIII)

Wallas (1926), Spearman (1930), Hutchinson (1941) et. al. state that creative thought in the form of mental process involved in creation is essentially the same in the different fields of endeavour.

1.2.5. Creativity Defined In Terms Of Fluency, Flexibility And Originality.

Creativity, according to Mackinnon (1962), characterized by originality and adaptiveness and realization.
Creativity has been defined by Ketchman and Kheiralla (1968) in terms of fluency, flexibility and originality in the following manner. According to them creativity is:

"the ability of a person to achieve ideational fluency, spontaneous flexibility, original products and remote associations in response to a problem or stimulus". (p. 76)

1.2.6. Person, Process, Product And Press - some Aspects Of Creativity.

By analysing fifty definitions of creativity Rhodes (1979) found four aspects of creativity - person, process, press and product. In defining creativity some psychologists have given stress on person, some on process, and some on press and product. Some again, have tried to combine those four strands in order to get a total picture of creativity.

Guilford (1956) explained creativity under the heading of divergent thinking. He believed that creativity is not a unitary trait, but a group of mental abilities. These mental abilities can be grouped under divergent thinking.
According to Hallman (1963), creativity

(a) is a whole act, a unitary instance of behaviour.
(b) terminates in the production of objects or forms, of living which are distinctive.
(c) evolves out of certain mental process
(d) co-varies with specific personality transformation, and
(e) occurs within a particular kind of environment.

Torrance (1969) defines creative thinking as:

"the process of sensing gaps or distributing missing elements, forming ideas or hypotheses; and communicating the results, possibly modifying and retesting the hypotheses"

(p. 16)

Another important way of looking into the process of creativity is to study creative problem solving which refers to the ability of ingenuity way of solving a problem. Some early psychologists (Dewey, 1910; Wallas, 1926; Hillgard, 1959) in different ages have studied creativity as problem solving. Recently, in India, creative approach to problem solving with various items have been studied by Chakraborty and Kundu (1976-77, 1977).
Dewey (1910) explained the steps of the creative thinking process in the following way:

(a) Formulation of the problem.
(b) Analysis of the problem.
(c) Understanding the nature of the problem.
(d) Formulation of solutions.
(e) Critical examination of solutions.

Problem solving undoubtedly is a creative process. Because problem is there if question is there. Curiosity creates problems. So for seeing or formulating problems one must be curious to his environment. Again the problem for its solution demand person's experiences to be reorganised constantly. As the problem is complex reorganisation of individuals experiences become more and more complex.

In this regard the following statement of Kumdu and Chakraborti (1975-76) is remarkable:

"Sometimes the solution of the problem is so obvious that it requires either slight or no reorganisation of experiences, i.e., the organisation of experiences already existing in the mind of the individual fits accurately in the problem in question. But even in such cases, it has
been found that some individuals prefer to try new models and arrive at the conclusion in a different way. (p. 40)

Other than process some psychologists like May (1979) and Vinacke (1979) put stress on environment in defining creativity. May (1979) defined creativity as:

"the encounter of intensively conscious human being with his world" (p. 10)

Vinacke (1979) defined creativity as:

"as an integrated harmony between external world of reality and individuals internalized needs" (p. 9)


Considering creativity as a product of personality behaviour Guilford (Jha, 1978) writes:
"creative personality is then a matter of those patterns or traits that are characteristics of creative persons. A creative pattern is manifest in creative behaviour patterns, which includes such activities as inventing, designing, contriving, composing and planning. People who exhibit these types of behaviour to a marked degree are recognised as being creative" (p. 120)

It is very normal to study creativity by means of product. Because quality of something can be measured or taken into consideration if it comes into existence. Guilford (1956) has given importance on creativity as a product in his attempt to measure creativity systematically through psychometric procedures. Considering creativity as 'Divergent Thinking' Guilford, in his earlier study (1956), showed through factor analysis that creativity includes fluency, flexibility, originality elaboration and evaluative abilities which are measurable units.

Mackinnon (1962) commenting upon the novelty and social judgement writes that creativity involves a response or an idea that is new or at least statistically infrequent. Creativity to some extent must be adaptive
to reality. It must serve to solve a problem, fit a situation, or accomplish some recognizable goal. And creativity involves a sustaining of the original sight; an evaluation and elaboration of it, a developing of it to the full.

According to Stein (Taylor, 1964) a process may be regarded as creative:

"When it results in novel work that is accepted as tenable or useful or satisfying by a group at some point in time" (p.6)

Considering creativity as some kind of behavioural manifestation Raychowdhury (1968) has pointed out that:

"... traditionally creative activity has been viewed as the manifestation of some inherent capacity/ability of the individual. The manifestation generally takes the form of novel original and unique artistic or scientific - logical work."

(p. 108)

Anderson (1978) also described creativity in terms of product. According to Anderson (1978):
"originality is usually defined as some measure of the statistical uncommonness of responses, while creativity refers to a high professional estimate of the worth of these responses". (p. 121)

Considering creativity from the standpoint of product Guilford (1971)* comments that creativity contains various meanings, but when the term is used in the phrase 'testing for creativity' its meaning may be restricted to those traits of individuals that predispose them to produce novel ideas.

Bourne, Ekstrand and Dominowski (1971) reported that:

"Mednick defines creative behaviour as behaviour that is uncommon and relevant, which is virtually identical to Maltzman's definition of original behaviour. For Mednick, original behaviour is simply uncommon, while Maltzman views creative behaviour as uncommon, relevant and called by society" (p. 72)

So it is found that creativity has been defined by many psychologists and researchers differently. These definitions would be evaluated in Chapter-III in order to find out the common characteristics of creativity if any and to reach a meaningful operational definition suitable for the present purpose.

1.3. NATURE OF CREATIVITY

So far the definitions of creativity are concerned the problem has been viewed basically from the following points of view namely:

1) Creativity and person
2) Creativity as a process
3) Creativity and press
4) Creativity as product

According to Torrance (1965) these approaches are essential for understanding creativity. According to Welsh (1971) these approaches are who, what, how and why of creativity which are basic questions to any researcher in this field. Welsh (1971) also added a fifth approach which is known as 'where' of creativity or creativity as a function of timespace continuum.
Wolf (Passi, 1973) conducted a survey involving 212 teachers in sixty-five elementary schools. The survey was related to the analysis of responses to a question, "what does the concept of creativity mean to you"? It was found that (a) 80 percent of the teachers reported creativity as a personality characteristics, (b) 25 percent of them related the concept to product and (c) 20 percent indentified the concept with the process.

Environment is also very important in relation to creativity. Environment may act as facilitator or hinderance to creative development. Weisberg and Springer (1961), Gowan (1971) emphasised on environmental stimulation for creative development. Many other researchers find out the relationship between various environmental components like home, school etc. and creativity (Cattell and Brimhal 1921; Roe, 1953; MacKinnon, 1960; Crutchfield, 1962; Flanders 1970; Penick, 1973). So various report of researches revealed that while personality and other personal factors have been studied in relation with creativity, there is a general paucity of systematic and coordinated investigations on the various environmental factors conducive to the development of creativity (Gupta, 1974).
Now we shall discuss the above four approaches to creativity in detail to get a clear picture regarding the nature of creativity.

1.3.1. Creativity And Person

Creativity and person involved such problems as the personality correlates of creativity i.e. the personality characteristics of the creators. Personality characteristics actually mean all the mental and even physical characteristics which a man possesses.


We want to know who are the creative persons? What are the different intellectual and emotional characteristics of creators? It has been disclosed by various researchers in response to those questions that creative persons are different persons. Highly creative persons possess mental abilities involved in searching synthesizing etc. They have high power of imagination, curiosity and originality not found in ordinary...
Lovenfeld (1952) reported the following key characteristics of creators:

1) Sensitivity
2) Fluency
3) Flexibility
4) Originality
5) Redefinition
6) Ability to abstract
7) Ability to synthesize and
8) Coherence of organization

Van and Kerr (1954) observed the following characteristics of creative individuals. Creative persons are imaginative, subjective, curious, impulsive, enthusiastic, original, confident, unconventional less worrying, less inhibited and less contented.

Strang (1959) observed following personality traits of creative person:

1) Sensitive perception of details of nature and the world of man.
2) Consciousness about problems which are unsolved.
3) An attitude of enquiry.
4) Fluency of thought.
5) Concentration

6) Integration

7) Flexibility and spontaneity

8) Originality and individuality

9) Ability to analyze and abstract

10) Ability to get new implications

11) Keen satisfaction in creative activities

12) Auditory imagery in composers

13) Superior in abstract and verbal intelligence
   (except for those in the performing arts who
do not always attain superior I.Q.scores) and

14) Sound mental health.

Torrance's (1969) investigation depicted that
there is significant difference between creative and
non-creative individuals so far personality characteris-
tics are concerned. He, after large number of studies
reported eighty-four characteristics of creative
individuals.

In regard to independent nature of creative
persons Barron (Jha, 1978) found that the creative
persons
"prefer complexity and some degree of apparent asymmetry in perceptual phenomenon. Their judgements tend to be independent and highly resistant to group pressure" (p. 85)

Report of Taylor and Holland (1964) support the above findings of Barron (Jha, 1978). According to Taylor and Holland (1964)

"creative persons are more autonomous than others, more self-sufficient, more independent in judgement (they go against group opinion if they feel it is incorrect) more open to the irrational in themselves, more stable, more feminine in interests and characteristics (especially in awareness of their impulses) more dominant and self-assertive, more complex, more self-accepting, more resourceful and adventurous, more radical (Bohemian), more self-controlled and possibly more emotionally sensitive, and more introverted but bold" (p. 27-28)
Garwood (1964) after studying high and low male creative science majors in college concluded that the high creative group scored higher than their lower counterpart on composite personality, originality, cognitive flexibility, time since first interest in science, dominance sociability, social pressure and self-acceptance. On the other hand, the high creative group scored lower on socialisation, self-control, desire to make a good impression and affection.

Cashdan and Welsh (1966) reported that highly creative high schools students obtained high scores on the traits like independence, non-conformity. They like change in their environment. On the other hand the low creatives obtained low scores on self-assertion and autonomy.

Some investigators like Parloff and Datta (1976) reported significant personality difference between high and low creative persons. According to them highly creative persons are more ambitious and driving, more independent, autonomous and self-reliant. The low creatives obtained low scores on the above mentioned personality traits.
The relationship between personality and creativity was studied by many Indian researchers. Raychowdhury (1966) observed that highly creative individuals were aggressive, sensitive, tolerant of frustrating experiences and tolerant of ambiguity. Verma (1973) reported that high creatives were characterised by some personality traits like autonomy, non-conformity and openness of mind. According to Gakhar (1975) high creatives are different from low creatives in respect of intellectual efficiency, flexibility, high self-acceptance and self-sufficiency. The findings of Paramesh and Narayanan (1976-77) were as follows:

1) Sociability is not significantly related to the creative potential.

2) Creatives do not like the company of others.

3) Creatives feel difficulty to make friends.

4) Creatives are less sympathetic than non-creatives.

Srivastava (1978) and Bhargava (1979) found that introversion is positively related to creativity. Sasmal and Jatial (1979) found that creatives were more intelligent, enthusiastic, lively, trusting, adaptable, free from frustration and relaxed. On the other hand, low creative
individuals were less intelligent, frustrated, tense suspicious. The investigation of Singh (1980) revealed that the sense of personal freedom is high in creatives that non-creatives.

Difference of personality characteristics have also been studied according to the various fields where creatives are engaged. Generally, difference has been made between two kinds of creativity -- artistic creativity and scientific creativity. Cattell and Trevdahl (1955) reported the following personality traits of creative scientist. Creative scientists are:

1) highly intelligent
2) very much sensitive
3) introspective
4) serious and self-confident
5) not a bohemian type like artist

Eiduson (1958) reported the following characteristics of artists:

1) Artists like to keep up the ideals of forefathers
2) Artists are tolerant, curious, and show interest in various type of activities
3) They have a certain pattern of communicating their feelings and experience to others
4) They are exhibitionistic and very much conscious about self-prestige.

On the other hand in connection with the personality traits of artists, Drevdahl and Cattell (1958) found that artists are intelligent and emotionally mature. They are also self-sufficient but bohemian type.

Ridason (1962) found creative scientists as having interest in complex works, independence of emotional behaviour, sensitivity, unconventionality and high ego strength. According to him though creative scientists are intellectually emotional, they are not emotionally unstable. On the other hand, Raychowdhury (1966) found artists as emotionally unstable.

So far we have discussed the personality characteristics of creative persons, researchers in this area claim that creators have got a unique personality pattern. This type of personality pattern, which is not found in ordinary men, helps the creators to sustain their creative activities. In this connection comment of Dellas and Gaier (1970) is as follows:
"... the evidence points up a common pattern of personality traits among creative persons and also that these personality factors may have some bearing on creatives in the abstract, regardless of fields" (p. 55)

But though personality of individuals may have great value in creative involvements, it is difficult to determine the particular characteristics which are invariable for a truly creative individual. Researchers' findings regarding personality correlates of creatives are too diverse to come to a definite conclusion for predicting personality characteristics of creative individuals. We cannot conclusively speak about some particular characteristics without which creativity is impossible. In some cases researchers came to a completely contradictory result. For example, Barron (1952) reported artists as cool, unstable and emotionally toned. On the other hand Drevdahl and Cattell (1958) observed artists as emotionally mature.

Inspite of above difficulties we may mention some personality characteristics like sensitivity, imaginativeness, curiosity, flexibility, autonomy, self-reliance, enthusiasm, introspection which seem to be more important
for creative involvement, because these characteristics and some others have been found common in most of the research findings.

1.3.2. Process of Creativity

When we know the personality correlates of creative persons we know only answer of one question i.e. who is the creative person? But there are other questions. The next important question is, what are the processes out of which an original product emerges or in other words, how do creative persons create.

Creativity as a process has involved the problem of intervening psychological process which leads to a creative product. The creative process has been described in a variety of ways. One of the first to talk about creative process was Helmholtz in 1896 (Stein, 1974).

Helmholtz (Stein, 1974) described creative process as consisting of saturation, incubation and illumination. Saturation is a period in which facts are accumulated, incubation comes without conscious effort. In this stage new combination among collected materials take place. Illumination occurred when some concept of the end state come to mind.
Whiting (Stein, 1974) also explained the creative process almost that of Helmholtz. But Whiting (Stein, 1974) also added a fourth step known as verification. The first step was described by him not as saturation, but as preparation.

Psychologists like Dewey (1910), Walls (1926), Spearman, (1930), Rossman (1931), Lusnato (Harriman 1951), Hutchinson (1949), Yamamoto (1964) described creative thinking as a process.

Dewey (1910) explained creative process as:

1) awareness of a problem  
2) analysis of the problem  
3) understanding the nature of the problem  
4) formulation of solutions  
5) examination of solutions critically and  
6) acceptance and rejection of solutions

According to Walls (1926) there are four fundamental stages of creative process:

1) preparation  
2) incubation  
3) inspiration and  
4) verification
To Spearman (1930) it is merely a mental functioning of seeing relationships with both conscious or subconscious processes operating.

Rossman (1931) observed that a novel product emerges out of following mental processes:

1) a need or difficulty is observed
2) available information is surveyed
3) solutions are formulated
4) solutions are critically examined
5) new ideas are formulated and
6) the new ideas are tested

Explanation of Rossman (1931) is almost like that of Dewey (1910).

Luzzato (Harriman, 1951) uses different terms to describe the creative processes. He distinguishes three moments of creation. The first is the simplification of reality in the active enjoyment of a natural manifestation of human life. This is similar to the stages of preparation and incubation. The next moment is when the simplification of reality is transferred into communicable form. This corresponds to the third stage of illumination. Final stage is described as verification.
Hutchinson (1949) devoted his long time to find out the processes of creative thought. According to Hutchinson (1949) there are four stages of creative process. Though names of the stages described Hutchinson (1949) are something different, he explained the steps of creative process in almost the same way as Wallas (1926). Hutchinson (1949) described the steps in the following way:

1) preparation
2) frustration
3) moment of insight and
4) verification

Yamamoto (1964) included process in his definition of creativity. According to him creativity is:

"the process of forming new ideas or hypotheses, testing these ideas or hypotheses and communicating the result"

Explanation of Stein (1974) is almost like that of Yamamoto (1964). Stein (1974) described creative process consisting of three stages, namely:

1) Hypotheses formation
2) Hypotheses testing and
3) Communication
Hypotheses formation, according to Stein (1974), means tentative idea or plan. Hypotheses testing is a phase of scrutiny and careful examination of idea. Communication is a phase which involves presenting the final product to others.

Most of the studies referred to above on the topic make it clear that these are diverse findings with regard to the process of creativity. But the essence of all such studies can be confined into four following heads, namely:

1) preparation
2) Incubation
3) Inspiration
4) Verification

These four creative processes have been found almost common in all findings in one way or other. So these four processes need to be discussed one by one.

1.3.2.1. **PREPARATION**

The following explanation of Guilford (1965b) will clear the nature of preparation:
"This is a fact gathering period, a period in which experiences are accumulated. Every creation comes from past experiences; the parts are old but the pattern is new. Where there is no equipment of experience there can be no invention". (p. 469)

So incubation or inspiration cannot take place without preparation. We must first collect raw materials aimlessly or with a definite aim. As in the case of scientific invention, there may be definite aim, systematic methods and conception about the end product. But artists, generally collect raw materials without any definite aim. But whether it is scientific invention or artistic creation preparation is a must. In this regard Guilford (1965b) observed:

"the collection may be guided by some known kind of creation toward which the person is working. On the other hand it may be a rather aimless browsing about; simply observing all one can .......... Goethe expressed the idea of preparation very well in the words, we can do nothing but pile up the wood and let it dry; it will catch fire in due time" (p. 470)
Stressing on preparation Barron (1969) observed with reference to Koestler (Barron 1969) that:

"...... great insights, results of what he (Koestler) calls the 'bisociative processes', occur only in minds that are amply prepared, through saturation in the relevant scholarly or artistic disciplines, to see hidden connections. You have to know a lot about the old to see the new" (p. 3)

Though Barron (1969) and Koestler (Barron, 1969) have given importance to the role of preparation in creative thinking some psychologists like Taylor and Holland (1964) and Mackinnon (1970) have reported differently. Taylor and Holland (1964) have observed that creativity does not depend on accumulation of knowledge. Their observation in this regard is as follows:

"It is easy to cite examples of people in the academic world who are well versed in their fields but who have demonstrated little creativity, one also can name creative and productive persons who are criticized by scholars for not being well read or for not giving due veneration to past knowledge and to the accepted orientations in their field. In other words, sheer..."
mastery of knowledge does not seem to be a sufficient condition for creative performance” (p. 17-18)

Mackinnon (1970) also expressed his view by saying that:

“In our scientifically and technologically advanced society the well-trained and highly educated professional must possess a large body of expertise. But, as just noted too much knowledge can be a dangerous thing for creativity .... the naive novice ventures what the expert would never attempt, and often enough succeeds” (p. 22-23)

We may agree with Taylor and Holland (1964) and Mackinnon (1970) on the point that accumulation of knowledge does not guarantee creative production. Too much schooling and conventional learning also do not help creativity, rather may go against creativity. But in spite of that, preparation is its important role in creative thinking. No mind, conscious or unconscious, can work without preparation. People generally add a touch of mystery with the valuable outstanding creative performance. But something greatest cannot come out of nothing. Behind any creation, behind any incubation, or illumination,
behind the curtain of any insight or flash or suddenness, there remain preparation. Coldridge stated that he had read 'almost everything' for writing 'The Rhyme of the Ancient Mariner' (Guilford, 1965b).

So we may possess similar view with that of Barron (1969). The following is the view of Barron (1969):

"..... although one's education may be unconventional and certainly in our studies we have seen that creative individuals frequently reject the schools and teach themselves, it remains true that hard work and dedicated practice are the almost invariable precursors of original and distinctive achievement" (p. 3)

Systematic preparation or preparation in the sense of 'leisurely shopping about' means a volcano which waits for proper stimulation to be erupted. There may be many seeds of preparation which die without expressing themselves in a plant of creation due to lack of inspiration. And insight or illumination may come from any stimulation. This stimulation was an apple to Newton, and water over-flowed from bath tub, which is a common experience, was to Archimedes.
1.3.2.2. **INCUBATION**

It is a stage of waiting, a stage of temporary pause or relaxation (Guilford, 1965b). In other words, it is a period of psychological going out of the field, a period of withdrawal from the problem. Though it is not a period of progress but essential to find a new link among collected materials spontaneously.

Incubation is the period in which no voluntary work is done upon the problem. In this period the idea or mood is indefinitely related to an ultimate goal. When the idea becomes definitely related to specific goal, we get the next stage of illumination (Harriman, 1951).

1.3.2.3. **INSPIRATION**

Inspiration or illumination is very important stage where meaningful connection among collected materials is established suddenly. This stage is characterised with suddenness or insight. It is the moment of flash. Inspiration cannot be forced. It is our common experience that we try to solve a problem vigorously but fail to solve at the moment. Afterward when we take rest or play solution comes like flash of a light.
Inspiration is the proof of incubation. Inspiration occurs, when the idea, which has been incubating, becomes definitely related to a particular goal. Christof (1939) described the illumination as of the solution of a problem after an accumulation of psychological products or food for thought. Blanshard (1940) explained it as 'leap of suggestion'. According to Portnoy (1951) illumination is the third stage in which the artist works with abundant energy.

Giving sufficient importance Spender (1971) writes about illumination with reference to poet's conception:

"Inspiration is the beginning of a poem and it is also its final goal. It is the first idea which drops into the poet's mind and it is the final idea which he at last achieves in words. In between this start and this winning post there is the hard race, the sweat and toil." (p. 18)

1.3.2.4. ELABORATION & VERIFICATION

After inspiration elaboration or verification begins. Upto the time of inspiration everything is almost implicit. After inspiration these implicit experiences
are transformed into objective form. In this stage evaluation is essential because any new or original idea is not necessarily good or acceptable. Guilford (1965b) observes:

"No product of imagination is necessarily good, or true or beautiful just because we created it. Creations in science or invention can be checked upon by making realistic tests; they must be consistent with reality. Creations in the arts must pass the test of satisfying human motives. If the creators self-criticism is insufficient, the criticism of his fellows will help in the selection and rejection of creations" (p. 471)

Self-criticism should start after inspiration. If evaluation takes place before inspiration then bud of creation may die. So it is desirable to allow ideas to come spontaneously without any obstruction of criticism. When implicit ideas take objective symbolic form then it is high time for criticism. It is said that "Better to compose with fury and correct with phlegm than to compose with phlegm and correct with fury" (Guilford, 1965b, p. 471).
So far we have learned much regarding processes of creativity. Inspite of above discussion there remain some critical questions to be answered.

First, the question arises, whether it is justified to divide the creative processes into some discrete stages. On the basis of psychological knowledge, perhaps, it should be right to mention that there are certain aspects rather than systematic stages of creative process. In this connection Vinacke (Singh, 1981) comments:

"it is necessary to conceive of creative thinking in terms of dynamic inter-playing activities, rather than as more or less discrete stages" (p. 11)

Secondly, whether it is justified to assume of strict hierarchy of the stages. Again, is there any guarantee that in all types of creative process all stages will be present distinctly?

In response to these questions it can be said that the concept of strict hierarchy of the stages cannot be accepted.
Harriman (1951) writes in this connection that:

"although these four stages can be distinguished in the thought process, yet it must be remembered that they may overlap. Incubation often occurs along with preparation, and revision may begin during the period of illumination" (p. 111)

Some psychologists like Taylor and Holland (1964) and Mackinnon (1970) found that the presence of accumulation of knowledge is not necessary for creation.

The comment of Lytton (1971) also deserves attention in this regard:

"The beginning of creation is marked, as many writers confirm, by a hunch, defense excitement, the awareness of some ill defined, half conscious problem --- and this may, indeed, precede the stage of 'preparation' of gathering the material" (p. 13)

So conception of 'preparation' as the first stage of creative process is dubious.
It can also be questioned whether 'incubation' as a stage of creative process is essential. Incubation, as it has been described, means a period of withdrawal from the problem. It is also said that in this period mind acts unconsciously to solve a certain problem. Though in some cases there may be a stage of incubation, but problem may be solved suddenly without much delay or difficulty. So in some cases, at least, question of withdrawal from the problem may not be necessary. It is true that many poets and writers recognized incubation as one of the stages of creative process (Lytton, 1971), but there are persons like William Blake (Lytton, 1971) who claimed that some of his poetry came without any apparent premeditation, as if dictated to him. So incubation as a stage of creative process is questionable.

The last two questions are:

1) What is the difference between creative processes and other psychological processes?

2) Is the creative process peculiar to creative product only?

Actually it cannot be said that preparation, incubation, inspiration, verification etc. are all mental stages of creative production only. Because other cognitive products may cross through preparation-
verification stages. 'Preparation' is the basis for all knowledge. Any kind of production whether convergent or divergent, may depend on preparation or accumulation of knowledge. Again, illumination, which is demanded as one of the very important aspect of creative processes, may function in any kind of learning. If we take the term 'illumination' similar to 'insight' or 'flash' we shall see that not only in the case of human being but also in lower animals 'insight' occurs (Kohler, 1925).

Therefore, we cannot conclusively say that the above mentioned processes are invariable and peculiar for creative production only. But researchers, generally come to know about 'processes' through interview and reports of many creative persons. So there is reason to believe that in many cases of creative production, at least, these processes remain present. It can be concluded, finally, that though all these processes are not invariable antecedent conditions to specific creative product, but may be regarded as important aspects of creativity.

1.3.3. Creativity as a Product

We can measure something when it come into existence. Barron (1969) said "creativity is the ability to bring something new into existence" (p. 10). If we want to evaluate so thing, whether it is art or science,
must be tangible, visible or measureable in any way. So product is the important aspect in defining creativity. If the product is novel or original, statistically infrequent, it will denote creative ability.

Guilford (1956) first tried to measure creativity systematically. He with the help of his "structure of intellect" showed that only divergent productions can be considered as creative productions. Divergent productions, according to Guilford, includes fluency, flexibility, originality, elaboration and evaluative abilities. Other than Guilford (1950, 1956) many psychologists and researchers like Rogers (1961), Maslow (1962), Maskinonen (1962), Stein (Taylor, 1964), Raychowdhury (1965), Anderson (1978), Bourne, Ekstrand and Dominowski (1971) considered creativity in terms of production.

1.4. CREATIVITY AND ENVIRONMENT

Creativity is not associated with cognitive factors, but also with environmental factors which stimulate the creative potentials to grow. Environment has far-reaching important effect on creativity. A man can possess the seed of creativity but that seed needs appropriate climate for its development. Keeping this
in mind some psychologists like May (1959), Vinaeke (1979), Gowan (1971) defined creativity as the effect of the environment that initiates men to product something original. Weisberg and Springer (1961) said that creativity for its fructification needs suitable environment. The creative mind interacts vigorously with a nexus of supportive and stimulating factors in the environment - whether in the home or in the school - to be worth its name. Gupta (1976-77) after reviewing vast literature on the effect of various environmental factors like home, school etc. on creativity, remarked that environmental factors are very important and it is necessary to identify the environmental factors conducive or non-conducive to creativity in an individual.

The term 'environment' has got a vast meaning. In psychology the term means influences belonging to different categories which affect the growth process of the person. Taking the term in a very wide sense we may first speak of two kinds of environment:

1.4.1. Prenatal environment
1.4.2. Postnatal environment
1.4.1. **Prenatal Environment**

Just after conception the function of environment starts. Various experiments conducted on the embryos denote the fact that variations in diet, nutrition and secretion of endocrine glands produce important effect on the development of embryo. So earlier environmental factors are as important as hereditary factors. The most thorough study of Pasamanick and Lilienfeld (1956) reported the pregnancy complication most intimately connected with behavioural disorders.

In this connection Medinnus and Johnson (1969) comment:

"our present state of knowledge suggests most strongly that inadequate maternal nutrition and inadequate prenatal care produce many kinds of defect in offspring. Improvement of maternal nutrition (and care) seems certain to markedly reduce certain varieties of problem behaviour."

(p. 83)

Richards and Newbery (1938) reported the literature which was related to the prediction of postnatal development from fetal activity. Sontag (1965) observed that the individual who was more active as a fetus was more apt to social apprehension at 2½ years of age.
Walters (1965) studied the relationship between postnatal development and fetal activity. He found at the 12 weeks of development that fetal activity was significantly correlated with adaptive and motor development. After 24 and 36 weeks test the author found that fetal activity was significantly correlated with motor and language development.

Therefore, though relationship between prenatal development and creativity has not been proved, it can be assumed indirectly that there might have a relationship between the two. But for the present it is sufficient to mention that prenatal period is one of the important parts of environment which has significant impact, at least, on some developmental aspects.

1.4.2. Postnatal Environment

There are many complex forces which shape human behaviour after birth. The impact of social, cultural and familial forces are great on human development. Again environment can be divided into two -- inner and outer. The inner environment may be called psychological. The inner environment includes various traits
which an individual possesses. These traits are not entirely hereditary, but many of them are acquired from outer or social environment.

Among the various external environments family is the immediate social world into which a child is born and within which he develops. Effect of home-environment, particularly in early childhood is far-reaching and remarkable. Harvey, Hunt and Schroder (1961) reported theoretical account regarding the effect of family. The following summary of findings of many researchers regarding the effect of home-environment on creativity has been reported by Gupta (1976-77):

"Among basal factors in the home environment, birth order and family size play an important role in the development of creativity. .... similarly the chances of the first born child to be creative are rated high..." Family background, education of parents, position of fame and honour held by the parents or others at home, in community and neighbourhood, feelings of superiority, the social and intellectual bases in the family, professional background and vocational independence of the parents have also been known to influence creativity of the child" (p. 38, 39)
From protective environment of home a child enters into the competitive environment of school. In school an individual spends his long important time. So undoubtedly teachers' behaviour in school, teacher pupil relationship, method of teaching, interest of other children in the class, type of reward and punishment given by the teachers would have remarkable effect on child.

Teachers' role in the classroom influences students creativity in various ways. Behaviour of teachers with the students, open-mindedness, authoritarianism, teachers' level of creativity and many other teaching types act as modulator of creativity (James, 1964; Wedtke and Wallen, 1965; Weber, 1979; Broome, 1967; Haddon and Lytton, 1968; Moore, 1973).

Many researchers like MacDonald and Rath (1964); Torrance (1965); Aliotti (1969); Barkar Lunn (1970); Brown (1973) reported that teaching methods have great influence in developing creativity.

Among the many facets of environment, the effect of family is greater on individual. Because family is the starting point in an individual's life.
His early development is almost wholly determined by the home environment and early development is more important than later development. Certain behaviour pattern which is formed in one's childhood cannot be changed in later life easily (Hurlock, 1978). Again, particularly, at the childhood stage as the child is mostly regulated by his home, the home mediates the influence of other kind of environments.

So the effect of home-environment is very important in individual's life. Again, there are many factors like emotional climate, intellectual environment, socio-economic condition, inter-personal relation, child rearing practices which constitute the environment of home. Among those factors child-rearing factors appear to be more important. Because, almost all important factors like emotional climate, child's relation with the siblings and parents or intellectual environment may depend to some extent on the child rearing practices adopted by the parents. The physical and motor development, social adjustment, personality characteristics of the child also largely, though not exclusively, depend on the various parental treatment and parental attitude. So out of various environmental factors in home, child rearing practices may be very important and also comparatively more observable and controllable variables. Again the child rearing system prevailing in a certain time
and space may depend upon several factors, e.g.,

1) Existing socio-cultural norm
2) Economic conditions
3) Parental expectation
4) Parental age, education and personality
5) Parents' perception of their child
6) Number and sex of the children and their ordinal position
7) Parents' attitudes etc.

All these indicate that the child rearing practices in a family may be, at least, one way of looking into the nature of home environment and it is for this reason the child-rearing variables seem to be very important and basic variables. The next section of this chapter, therefore, will be devoted to discuss the nature and effect of child rearing.

1.5. CHILD REARING

Child-rearing is the applied aspect of the psychology of development which is very important because the developmentalist is actually concerned with the practical problems.
The term 'child-rearing' may be taken in a broad sense. For the present purpose the term 'child-rearing practices' has been intended to mean anything and everything provided to the child by the parents, and which shapes the child's immediate environment. So child-rearing means parental behaviour to the child. Regarding parental behaviour Warren (1934) writes in the 'Dictionary of Psychology' that parental behaviour means:

"behaviour connected with the care and protection of the young (It includes both maternal and paternal behaviour)"

(p. 193)

Development and child-rearing are the two intimately related concepts and therefore, child-rearing variables may be discussed as dependent as well as independent variable. First we shall discuss the factors that determine the child rearing practice. Next we shall discuss the various factors that are directly or indirectly influenced by the child-rearing practices.

1.5.1. **Child Rearing as a Dependent Variable**

Child rearing practices are determined by various factors like existing socio-cultural norm, economic conditions, parental expectations, parental age, education and personality, parental perception of their child, family composition, parental concepts, attitudes and beliefs and many others. So we cannot view parental behaviour proper isolatedly from any of these factors. This is why child rearing variables are very much significant in relation to child's development as it includes parental behaviour proper as well as various antecedent conditions which give birth to these parental behaviour. In this connection we may refer to Lamb (1982) according to whom:

"... the behaviour of any parent has to be viewed in the context of her or his attitudes and behaviour of his or her spouse relatives and peer group and the characteristics of the infant involved"

(p. 105)

Again Lamb (1982) mentioned that some important conditions like value of parenthood, value of work etc. influence the quality of parental behaviour. According to Lamb (1982) value of parenthood which refers to the
individual motivation for seeking to become a parent, value of work which concerns the extent to which each individual's sense of fulfilment is derived from his employment, emotional and practical support from spouse, relatives etc. are all likely to influence the quality of parental behaviour.

There are also some other determinants of parental child rearing behaviour.

1.5.1.1. **SOCIETY AND CHILD REARING**

Society itself may determine parental behaviour. Society firstly can be divided into two groups -- primary group society and secondary group society. The village is largely a primary group society. On the other hand a city is a secondary group society. Individuals who belong to the primary group society are open to each other. Generally conflict of values among them do not occur and their behaviour are almost 'public behaviour'. Again the rural culture is not so dynamic. Members of this society are guided by some traditional values. According to Spencer (1912) and Durkheim (1951) parents of primary group society are believed to be highly conservative. According to Jaensch (Medinnus and Johnson, 1969) parents belonging to this type of society are likely to be authoritarian.
On the other hand, child-rearing practices of secondary-group society differ from primary-group society. An urban culture which is a secondary group society is dynamic and rapidly changing. Traditional behaviours have almost no value in preparing a child for adulthood. Parents are generally more permissive. Parents in this rapidly changing society do not know certainly as to what to teach the child (Reisman, 1953; Roehman, 1957). So children get more freedom in taking decisions.

1.5.1.2. SOCIAL CLASSES AND CHILD REARING

Child-rearing practices vary among social classes. Parents' education, occupation, income etc. are some of the important factors in defining social class. According to these factors, class can be divided into high, middle, low etc. Parents of different classes used different rearing methods according to their class values. Researchers like Maccoby and Gibbs (1954) reported that the middle-class and not the lower-class were more tolerant of aggression, sexplay and other expressions of impulse. Khon (Mediusnus and Johnson, 1969) writes that:
"Working class parents are more traditionally oriented and middle-class parents more positively oriented toward social change; and that for these reasons working class parents have the goal of teaching children to conform to parental values, while middle class parents continue to be interested in producing children more capable of self-determination of values and self-direction of behaviour" (p. 243-244)

The class status and economic condition have remarkable influence on the conception of parenthood. Generally the people of lower social class do not sacrifice their money, time and energy for their children, whereas middle class parents are very much interested in child-rearing affairs. They sacrifice their money, time, energy and even vocational advancement for the interest of their children. Because lower class people look upon parenthood as the "inevitable payment for sex relations", whereas middle and upper classes regard parenthood as the "fulfilment of marriage". So attitude toward parenthood remarkably determines child-rearing practices.
1.5.1.3. ATTITUDES TOWARD
PARENTHOOD AND
CHILD REARING

There are many factors which are responsible
for forming conception about parenthood. Firstly, the
childhood experiences in this regard have a far-reaching
effect. Parent who passed his days in an authoritative
atmosphere may develop authoritarian outlook. On the
other hand parents who received liberal treatment from
their parents will be expected to be liberal in their
child-rearing treatment.

Several studies reported influence of a
person's own childhood on his own performance as a parent,
Symonds (1939) observed four groups of parents -- accepting,
rejecting, dominating and submissive. He reported
that accepting type developed in homes marked by good
adjustment and acceptance. Dominating parents experienced
less freedom, whereas submissive parents experienced much
freedom in their childhood. Radke (1946) observed that
parents who experienced strong disciplined behaviour in
their childhood, want to implement the same in treating
their own child. According to Bronson, Kalten and Livson
(1959) mothers who had been dominated by their mothers
inclined to exercise strong authority in their homes.
The physical and emotional conditions of mother in pregnancy period also colour the role of parenthood and in turn determines the favourable or unfavourable child-rearing practices.

We have so far discussed child-rearing as dependent variable i.e. what are the different factors which may determine child-rearing practices. The subsequent section will deal with child-rearing practices as independent variable in order to explore its role in shaping the developmental goal and direction of a child.

1.5.2. Child Rearing as Independent Variable

Parental child-rearing practices are in many ways connected with the development of child. But it is not possible to discuss how each kind of rearing practice is related to child's specific development and this is not necessary also. For the present purpose we shall discuss how child rearing practices are related to such developments which seem to be connected with the development of creativity.
1.5.2.1. CHILD REARING
AND LANGUAGE
DEVELOPMENT

The place of language in human life is unique. Because it is such a characteristic that differentiates man from all other organisms. Again human ability like intelligence and creativity depend largely on linguistic ability. The role played by language in communication of ideas, in concept formation and in problem solving is apparent and remarkable. So the relationship between child-rearing and language development need to be discussed.

Many researchers (McCar, 1930; Sampson, 1956; Rosenthal, 1957; Bandura and Huston, 1961; Tulasi and Mathew, 1969; Sireesha, 1971; Beveridge and Jerrams, 1981; Rubenstein, Howes and Boyle, 1981; Lawrence, 1984) assert that the effect of home environment on the development of language is highly important. But one may endeavour to know how do the factors of home-environment like family size, parents' occupational and educational levels, emotional and accepting atmosphere, parental attitude toward their children's speech etc. as pointed out by the above mentioned researchers, actually modulate the language development of their children. One can safely assume these and many other factors of home environment acts through parental child-rearing. These factors
determine child-rearing practices of parents and in turn regulate language development of children. Child rearing variables are mediating variables between the factors of family environment and language development. For this reason we shall discuss the relationship between child rearing as well as factors which determine child-rearing and language development.

Sampson (1956); Rosenthal (1957); and Bandura and Huston (1961) assert that the acquisition of speech in children is positively related to relaxed and accepting emotional atmosphere at home. They also observed that the acquisition of speech also depends on the encouragement for vocalization received by the child within the home.

Many researchers like Smith (1935); Davis (Medinnus and Johnson, 1969) observed the fact that better language development takes place with greater scope of contact with the adults. Davis (Medinnus and Johnson, 1969) observed that the only child is superior in all forms of verbal ability to children with siblings. He also reported that twins are retarded in verbal ability than children with siblings. Again Howald (Medinnus and Johnson, 1969) reported that triplets have less verbal facility than twins.
The above mentioned individual differences in vocabulary depend directly on the contact with adult. The only child is superior in vocabulary because he gets more chance of contact with adult than children with siblings or twins or triplets. The only child gets treatment from parents, which differs markedly from the treatment by parents of many children. Actually family size controls the child rearing practice of parents. In small family, for example, parents can give much attention to the child. They can be much child oriented. So in the broadest sense of the term, contact with the adults is a part of the child rearing which may regulate language development of the children.

Children's language development, again, may differ according to social class in which they belong. Mccarthy (1930) and Templin (1957) found that children of upper social class are mature in language development. Generally, in the lower class, verbal interaction between parents and child is low. Parents of lower class are also linguistically handicapped. On the other hand middle class parents are found to be linguistically sound, and comparatively verbal interaction between parents and child is greater. Moreover, middle class parents encourage and stimulate verbalisation of their children by reading to him, discussing events with him or making reasoning with him.
Bernstein (1961) observed two social styles of communication—one is restricted and the other is elaborated. Speech of working class is stereotype and condensed, lacking in precision. Middle class, on the other hand, used elaborated style. Educated middle class parents are more specific, precise, and flexible in the use of language. Hess and Shipman (1965) reported that total amount of verbal output of middle class is greater as compared with the lower class mothers.

Therefore, the findings of researchers support the view that social class have an impact on language development of child. But how does social class regulate the language development of child? Actually, it is not the social class itself that controls the language development. Parents' educational and occupational position reflects through parental child-rearing which in turn control development of language. For example, Sireesha (1971) made a comparison of the vocabulary of pre-school children of mothers of different educational level. It was found that the higher levels of education of the mothers have a direct positive bearing on the language performance of their children. It is also found that there is a difference among maternal behaviours according to their levels of education. The mothers with low levels of education were found to be much more restrictive and were insistent on acceptable mode of behaviour in their
children. On the other hand, mothers with high levels of education were encouraging and provided opportunities and reinforcement for verbal expression. So the findings of Sireesha (1971) indicate (though it was not explicitly mentioned by the author) that parental behaviours are mediating variable between maternal educational levels and language development of the children.

Several investigators (Nelson, Carakadden, Bonvillian, 1973; Newport, Gleitman and Gleitman, 1975) have highlighted that parental direct child-rearing concerning the type of verbal interaction that parents engage in with their children influence the acquisition of linguistic skills. It is reported that the modification parents make in their speech to toddlers are related to the vocabulary of children. Some other studies (Snow, Arlman-Rupp, Hassing, Jobse, Joosten and Vorster, 1976; Ringler, 1978) have reported that mothers' use of question is positively related to certain aspects of language development.

So findings of all researches mentioned here suggest that there is an intimate relationship between child-rearing variables and language development. Some factors of home environmental like parental occupation, parental education, parental attitude have been found as child rearing variables as they are antecedent condi-
tions of parental behaviour to children.

1.5.2.2. CHILD REARING
AND INTELLECTUAL
DEVELOPMENT

Creativity is one of the important aspects of intellect. So if we can find out any relationship between home environment as well as child-rearing variables and intellectual development, then, we can reasonably hypothesize that child rearing has an impact on creativity. So the role of family in children's intellectual development need to be discussed.

It must be noted here that it is not possible to present an exhaustive review of research regarding effect of home environment on intellectual development which is exceedingly rich. We shall try to present here some broad categories of seemingly important correlates of children's intellectual development.

Home-environment has an important effect on intellectual development of child. The child who does not get any scope to stimulate his curiosity or does not get encouragement from parents cannot realize his full potentials. A child grown up in intellectually sterile environment cannot develop his potential. Parental
neglect, authoritarian child rearing methods, severe punishment, frequent threat encourage the development of fear, anxiety, resentment, feeling of insecurity which retard intellectual development of the child.

Some factors of environment related to the socio-economic status, education of parents reveal significant variation in young children's intellectual development (Laosa, 1982).

Laosa (1982) again observed that:

"A large number of researchers have related measures of children's intellectual competence to various aspects of maternal behaviour. Their findings suggest that the child's most valuable intellectual experiences during early childhood occur in interactions with another person who explains, reaches, reasons with, helps, entertains, converses with, praises, shares, and expands the child's activities." (p. 5)

Some investigators like Lamb (1976); Radin (1976); Clarke-Stewart (1977) have noted the effects of parental behaviour on intellectual development of child.
It was reported by Clarke-Stewart (1977) that a high degree of father-child interaction helps the child to perform better on tests of intellectual development.

Sigel et. al (Laosa, 1982) suggested that parental teaching strategies that involve demands to symbolise are beneficial for the child's intellectual development.

It must be noted that these environmental conditions in the home basically refer to the rearing pattern of parents, which, again, regulates children's intellectual development.

1.5.2.3. CHILD REARING AND EMOTIONAL DEVELOPMENT

Favourable emotional climate is very much essential for the all round development of the child. A child cannot fully even utilise his intellectual abilities if he is deprived of emotional warmth. Emotional deprivation results in a deficiency of both emotional nourishment and intellectual stimulation. The child who comes from unfavourable emotional climate cannot adjust satisfactorily to his social environment. It is essential for a child to receive emotional warmth for establishing
affectional relationships with others. There are fami-
liies where child get little scope to experience the plea-
sant emotions like curiosity, joy, happiness, affection,
imagination etc. Some children grow up in environments
that tend to stimulate the development of the unpleasant
emotions especially anger, fear, hatred, jealousy etc.
Some children, again, are 'emotionally starved'. All
these kinds of emotional environment have a far reaching
effect on the development pattern of the child. Casler
(1961) and Yarrow (1961) observed that deprivation of
affection hampers the physical development as well as
mental development. Babies deprived of affection suffer
from listlessness, emaciation, quietness, general apathy,
loss of appetite and psychosomatic illness. The child
also lose the ability to concentrate and is distractible
and his speech development is delayed. On the other hand,
who received pleasant emotions in family develop self-
confidence and ultimately able to make successful adjust-
ment to life. In this regard Lovell (1976) comments:

"If his first impressions are of an
unfriendly impatient world, which is
either disregarding him totally or
making too many demands on him too
quickly he may start to regard having
transactions with other people as
difficult unpleasant or liable to
expose him to felling ashamed" (p. 5)

Many investigators reported that some child
rearing behaviour of parents were related to emotional
development of their child. Out of these factors which
constitute undesirable climate at home can be broadly
divided into two -- separation and rejection. Separation
from parents and rejection from them are the two basic
sources of unfavourable emotional climate. On the other
hand children of accepting parents are emotionally healthy.
Rehner (1975) found that rejected children were more
emotionally unstable than accepted children. Some early
investigators like Fitz-Simmons (1935), Maltzick (1936),
Wolberg (1944) reported the relationship between parental
rejection and inability of the child to form warm attach-
ment to others. Slater (1962) observed children who did
not receive adequate parental warmth were introverted
and having less ego strength than children who received
warmth treatment from their parents. Siegelman (1966)
also found that parents of introverted and withdrawn
children were rejecting and punitive. On the other hand
children who had loving parents were perceived by their
classmates as not being withdrawn. Erikson (1966)
observed that for the development of healthy personality
and self-confidence child should develop a sense of basic trust in his relationship with parents. Due to lack of this basic trust and affection rejected children became aggressive and hostile. Bandura and Walters (1959) reported that failure to satisfy the child's needs for dependency in early years causes development of hostile behaviour in adolescence. Medinnus (1961) also has given importance on parental acceptance for desirable development of the child.

Therefore, it has been clear from the above discussion that emotional warmth is the most crucial and pervasive factor affecting the child favourably and emotional deprivation causes unfavourable reaction on the child's development. But the basic question is how the emotional climate of the home regulates development of the child. For example, absence of the father, mothers' employment, broken home, unfavourable economic conditions, adverse attitude toward parenthood or toward child create unfavourable emotional climate. If we consider carefully we shall be able to realise that between emotional climate and child's development there is an intervening process through which the emotional climate of the family controls the child's development. This intervening process is child rearing. Actually parental child rearing
basically and directly regulate child's development. Broken home, separation, mother's employment etc. give birth to certain type of rearing system which controls directly and more actively child's development. Parental rearing practices in two cases, where child gets emotional warmth and where he is emotionally deprived are different and this difference play an important role to mould the child in a particular way.

1.6. CHILD REARING AND CREATIVITY

So it is quite apparent that home environment is more important than other kinds of environment and child-rearing is more effective aspect of home environment in connection with the child's development. The relationship between parental child-rearing and child's development has also been discussed according to our necessity. Some light has also been thrown on the relationship between environment and creativity. Now in the light of above discussion one can assume that child-rearing being an important aspect of home environment is significantly related to creativity which is another important part of intellect.
Child-rearing factors may play a critical role in facilitating or blocking creativity. It is possible that some individuals would manifest more creativity if they were in environments that valued and supported creativity. In this connection, comment of Stein (1974) is as follows:

"... We have learned that creative individuals are self-confident; if we can develop techniques that will stimulate or foster self-confidence, we can expect that to the extent to which this goal is attained, the probability of an individual becoming creative is enhanced. We know that flexibility of thought processes is characteristic of creative individuals; we can expect therefore that if an individual can be helped to achieve more flexible thought processes, than he can also be expected to be more creative". (p. 7-8)

Many researchers assert that the following factors like parent-child relationship, over-protectiveness, respect for individuality, parental tolerance and self-control play important roles in the development of creativity (Mackinnon, 1960, 1962; Crutchfield, 1962; Kidison, 1962; Nicholas and Holland, 1979; Druvdahl,
Torrance (1969) observed, highly creative pupils work was characterised by humor, playfulness, relaxation. But most of the parents and teachers do not try to understand these creative personalities. Torrance (1964) undertook a cross national study involving India, Germany, Greece, the United States and the Phillipines to know the pattern of behaviours of children which are rewarded or punished by teachers. He found that there was undue punishment:

".... of the child who is courageous in his convictions, the intuitive thinker, the good guesser, the emotionally sensitive person, the individual who regresses occasionally, the visionary person, and the one who is unwilling to accept something on mere says so without examination of evidence" (p. 24)

On the other hand, Torrance (1964) observed that the persons are rewarded, who are:

"Courteous, doing work on time, being obedient, being popular and well liked, and being willing to accept the judgments of authorities" (p. 24)
Though the above study of Torrance (1964) was on school system but the result is also applicable more or less in the case of parental rearing treatment. Parents cannot avoid their responsibility for introducing non-creative system in school. Stein's (1974) comment in this regard is as follows:

"It is likely that if parents demanded an educational system that emphasized more creativity, they would get it. Parents should influence not only the school system, but their own children in this regard.
Consider the effect if mothers were to ask their children not how good they were but how creative they were in school that day. Is it not possible that parent's lack of concern with creativity is the reason that schools do not do more in the direction of focussing on and rewarding creativity" (p. 157)

Many researchers like Dewing and Taft (1973) tried to relate the level of creativity test performance in children to parental behaviour. It has been found in their research that highly creative parents preferred a
complex and stimulating environment for themselves and for their children. The number of working mothers are more in highly creative group than less-creative group. Mothers of the creative children permitted them more contact with influences outside the home. According to Holland (1961), Nicholas (1964) and Setzels and Jackson (1961) parents of highly creative adolescents were more permissive and stressed openness to experience and an enthusiasm for life. On the other hand parents of highly intellectual youth like, conforming and disciplined behaviour of their children. Watson (1957) studied personality differences in children reared in strict and permissive environment. He found that the children who have greater spontaneity, originality and creativity belonged to permissive family. These children from more permissive families also have the quality of independence and socialization. Ellinger (1976) observed that highly creative fourth-grade children were more involved in family activities and experienced less physical punishment than less creative of the same age.

Maximum investigations reveal the fact that permissive environment is positively related to high creativity whereas coercive environment is adversely related to creativity. But some psychologists like Ornstein (1976) observed that permissive child-rearing attitude of the mothers are not significantly related to high creativity.
Roe (1953) and Mackinon (1965) collected retrospective reports of eminent scientists and architects about their childhood experiences. Scientists and Architects reported that they got sufficient freedom from their parents to act independently and experienced neither over-protection nor rejection from their parents.

According to some experimental studies (Singer, 1961; Weisberg and Springer, 1961) and biographical reports of outstanding people (Greenacre, 1958; McCurdy, 1976), the father is often the important factor in identifying and stimulating the child's talents. Weisberg and Springer (1961) report a correlation of .5 between the integrity of the father-child-relationship and the level of creative test performance.

Cheng-ping (1973) observed that mother's authoritarian score was related to child's picture fluency and father's equilitarian score was related to child's originality. Because of sex difference the effect of mother and father was different. Stephen (1974) investigated the effect of absence of father on creativity. He observed that mothers were more important factor than fathers in relation to child's development. Chakraborti, Kundu, Mukhopadhyay (1985) found that creativity was
positively related to verbal reward and negatively related to physical punishment. Siciliano (1986) observed the relationship among parental ratings of traits and four types of creativity i.e. figural, symbolic, semantic and behavioural in adolescence. Most significant relation was found between semantic creativity score and parental rating of trait as discovering new ideas and new way of looking at things. Sharan (1987) found that parental behaviour is significantly related to creative development. It was observed by Sharan (1987) that the presence of father has non-significant role in determining verbal creativity, whereas the presence of father positively affects the development of non-verbal creativity. Again it was found that emotional bonding between parents and children is high in high creative group in comparison to their low counterparts. Children of high creative group were also found to receive better care from their parents as compared to their low counterparts. The effect of reward and punishment were found to be different in verbal and non-verbal creativity. Sharan (1987) also observed that the high creative respondents hold more respect and they are valued in the family as compared to their low counterparts. The peaceful home-environment was positively related to the development of creative potentials.
The above discussion makes it clear that home environment has significant role to play in the development of creativity. Though some investigators mentioned that parental behaviour proper is related to creative development of the child, most of the researchers did not try to explain how several environmental factors of home may be connected with creative development of the child. For example, many investigators examined that respect for autonomy, parental tolerance, family size or birth order, parental education, parental sex or interest pattern determine the development of creativity. But here the question arises as how these environmental factors may operate its impact on creative development of the children. One way to explain this process is that all those factors and many others actually work through parental child rearing practices. That is why child-rearing appears to be the basis variable for investigation. Therefore, we presume at this stage that various environmental factors within home determine parental child rearing behaviour which in turn regulate the creative development of the child. This problem will be further specified in the subsequent two chapters to arrive at the hypotheses of the proposed investigation.