CHAPTER I

* INTRODUCTION

* REVIEW OF RESEARCHES
Chapter - I

INTRODUCTION

Locus of Control

Locus of control, as one of the personality constructs under social psychological research, has drawn the attention of a large number of research workers in the present era. It has been introduced into the psychological literature during 1960s. Since then there are about a thousand reported studies. The interest in research in this topic is gradually gathering the momentum. The idea, which was developed by Rotter (1954), was later examined by different authors with the formulation of new scales (Bialer, 1961; Crandall, Katkovsky, and Crandall, 1965; Dean, 1969; James, 1957; Reid and Ware, 1974; Rotter, 1966). But there are very few studies in the Indian context (Carment and Paliwal, 1974; Das, 1973; Das and Singha, 1975; Panda and Panda, 1977, 1978; Mishra, 1966, 1974, 1978; Siha, 1972). It is hoped, therefore, that the present study will add some facts to the existing literature.

The concept of locus of control (LC), also known as internal-external (I-E) control, developed out of social learning theory of personality (Rotter, 1954; 1966; Rotter, Chang, and Phares, 1972). According to the social learning theory it was a generalized expectancy pertaining to the connection between personal characteristics and/or actions and experienced outcomes. Lefcourt (1976) pointed out that "the generalized
expectancy of internal control refers to the perception of events, whether positive or negative, as being consequent of one's own actions and thereby potentially under personal control. The generalized expectancy of external control, on the other hand, refers to the perception of positive or negative events as being unrelated to one's own behaviour and thereby beyond personal control. It was inferred, therefore, that LC was a measure of personality of the extent to which individuals believed their achievements in life under their own control and due to their own skill and labour. Such persons are known as internal locus of control (ILC). On the other hand persons believed that achievements are not under control of their's rather they are the functions of luck, chance, fate, powerful others or the uncertainty in the future. Such persons are known as external locus of control (ELC).

Perception of events whether controlled internally or externally depends upon certain factors present in the environment. It is just like Lewinian (Lewin, 1951) approach in field theory where he employed the term "life space" (or "psychological field" or "total situation"). It expressed the coexisting facts which determined the behaviour of an individual at a given moment. According to Lewin (1951b)behaviour of an individual was a function of the life space: \( B = f(\text{LS}) \). The life space, he explained, was a product of the interaction between the person (P) and his environment (E). In symbolic
expression it was $B = f(LS) = f(P,E)$. Perception of events, therefore, was subjective as well as objective. He pointed out that the "processes of perception which should be related to the boundary zone depend partly on the state of the inner part of the psychological field, i.e. upon the character of the person, his motivation, his cognitive structure, his way of perceiving, etc., and partly on the stimulus distribution of the retina or other receptors as enforced by physical processes outside the organism". Lewin (1951) also stressed the subjective nature whereas Brunswik (1951) emphasized the objective probability of the perception of events.

The child, as explained by Cromwell (1967), at an early age does not conceptualize performance in terms of success as compared to the matured child. The younger child does not even conceive of personal responsibility and control except for limited situations or occasions when others point it out to him. Gradually he learns that his behaviour is more effective in life-like situations. In the early years these situations would include playing with toys, verbalizing his wants, and in later years mastering more complex and long term goal directed activity. In other words he becomes more and more aware of the responsibility and the short comings of his own activity. The conceptually developed child sees the outcome of events and life circumstances being gradually determined by himself, known as internal locus of control.
Locus of control is the function of one's development in age and experience (Bialer, 1961). He formulated that, "In the early stages of development, there is no conception between the outcome of events and one's own behavior. Consequently, young children, as a group, tend to view their experiences as being externally controlled. As the development proceeds, the child begins to note that he is often able to influence the outcome of events by his own actions. Therefore, as the child grows older, he is more likely to view many of his goal-directed experiences as being internally controlled".

Rotter (1954, 1960, 1971; Rotter, Chance, and Phares, 1972) in social learning theory pointed out that a person's actions are predicted on the basis of his values, his expectations, and the situations in which he finds himself. He formulated the predicting behaviour in the following manner:

\[ B P_{X_1} S_1 = f(E S_a S_1 & RV a, s_1) \]

This means that the potential for behaviour \( X \) to occur in situation 1, in relation to reinforcement \( a \), is a function of the expectancy of the occurrence of reinforcement \( a \) following behaviour \( x \), in situation 1, and the value of reinforcement \( a \) in situation 1. Within the social learning theory Rotter has formulated a more general formula which is as follows:

\[ N P = f(FM & NV) \]

This means that the potentiality of occurrence of a set of behaviour that lead to the satisfaction of some need (need potential = NP) is a function of both the expectancies that
those behaviours will lead to reinforcements (freedoms of movement = FM) and the strength or value of reinforcements (need value = NV). Rotter (1975) further stated, "When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labelled this a belief in external control. If the person perceives that the event is contingent upon his own behaviour or his own relatively permanent characteristics, we have termed this a belief in internal control".

Measurements of locus of control

Gradually new scales are devised to measure locus control. Some old scales are modified too. Some of the important scales of measuring LC are discussed here. The first of this kind is James' I-E scale (James, 1957). It is a 60 item questionnaire used to measure social learning theory with I-E control reinforcement. Phares (1957) has a short Likest-type scale for measuring LC. It has 13 internal and 13 external oriented items, used to study expectancy changes in skill and chance situations. On the basis of James (1957) and Phares (1957) scale, Bialer and
Cromwell (1960) developed a scale of locus of control and measured the degree to which the subjects perceived the outcome of events as being internally controlled. This is a verbally administered children's LC scale. Afterwards Bialer (1961) modified the scale and used it for mentally retarded children.

Bialer's (1961) scale contains 23 questionnaires with yes-no responses. A high score on the test indicates internal locus of control. When the items are presented to a child he has to say either "yes" or "no" and thereby he attributes the locus of control to himself or others. Some of the typical items are as follows: "Do you really believe a kid can be whatever he wants to be?" "Can you do anything about what is going to happen tomorrow?" "When nice things happen to you, is it only good luck?" Bialer (1961) was interested in the developmental aspects of the I-E control attitude as well as its relation to the conceptualisation of success and failure. He found that a matured child would be internally controlled and would show greater response to success and failure cues. He observed that the interaction of social class and ethnic group was highly related to I-E control attitudes. Middle class children, in general, were significantly more internal than lower class children. Lower class Negroes were significantly more external than middle-class Negroes and whites. This test correlates highly with
Mental Age \( (r = .47) \) and less so with Chronological Age \( (r = .02) \). Therefore, it becomes dubious for use as an independent measure for locus of control.

A test was developed by Battle and Rotter (1963) which was used for children. The test was modeled after Rosenzweig's (45) Picture Frustration Test. Therefore, it was a projective test in nature. It is devoted to an exploration of the interaction of class and ethnic group with a personality variable like I-E control of reinforcement. It contains six pictures about which a child has to state what he would say in the depicted life like situations which involving attribution of responsibility. It contains a reliable scoring manual (reliability = .93 \( p \leq .001 \)). The projective measure correlates significantly \( (-.42) \) with the Bialer (1961) questionnaire in a group of White and Negro children. However, reliability of scoring like some other projective tests, this test has the problem of scoring and administration.

Rotter (1966) developed a scale known as Rotter's I-E scale. It is used at present largely by research workers. He used the scale to measure the individual difference in social learning situations and subjects' expectation about how reinforcement is controlled. In other words he devised the scale for finding out the effects of reward of reinforcement and to determine whether the person perceives the reward
as contingent upon his own behaviour or independent of it.
The scale contains 29 forced choice items including 6 fillers. Item analysis and factor analysis show reasonably high internal consistency. Test-retest reliability is determined with University students (Male, r = .60; Female, r = .83) and children (.72). The score is the total number of external choices.

The Intellectual Achievement Responsibility (IAR) scale developed by Crandall, Katkovsky and Grandall (1965) was used to study children's beliefs in their control of reinforcements in intellectual academic achievement behaviours. The scale measures a child's attributed responsibility to himself or to other external sources in intellectual achievement situations. The test includes a number of common intellectual experiences for school going children both at home and at the school. It contains 34 forced-choice items out of which 17 deal with success experiences and the remaining 17 items deal with failure experiences. Thus, the scale yields two subscores. One for beliefs in internal responsibility for success (I+) and another for beliefs in failure (I-). Two scores when summated give the general index of internal beliefs. The higher the score the greater is the feeling of internal control. The IAR scale has low correlation with I.Q. (.16 to .27). The test-retest reliability coefficients are .69, .67, and .69 respectively for the IAR total, I+, and I- scores. The split-half reliability for girls is .76 and for
It has some advantages in measuring children's locus of control. According to Crandall, et al. (1965), a child in school has to show one of the two different feelings. One such feeling may be that his promotion, grades received, and other achievements in the academic field are due to his own efforts. On the other hand the child may show a fatalistic attitude and feel that his achievements are due to mercy of his teachers, peers, and parents. The scale can't be applied to very small viz, pre-school children. It is not suitable for them as it deals with academic-intellectual achievement situations (Mischel, Zeiss, and Zeiss, 1974).

Nowicki - Strickland locus of control scale (Nowicki and Strickland, 1973) is used for children. It is a paper-pencil measure consisting of 40 questions. Each question is answered either "yes" or "no". There are some direct questions for children. For example: "Are some kids just born lucky?" or "if you find a four-leaf clover do you believe that it might bring you good luck?" and so on. The higher is the score the more external the orientation. Reid and Ware (1974) developed a scale for measuring three factors viz, self control, social systems control, and fatalism. It has 45 forced-choice items including 13 fillers. The
scale is entitled as "The Raid - Ware Three - Factor Internal-External Scale". The higher the score the more external is the individual.

"The Stanford Pre-school Internal-External Scale" (SPIES) is reported by Mischel, Zeiss, and Zeiss (1974). It is a questionnaire having 14 items. Each item consists of a pair of alternatives either (a) or (b). The subject has to select one statement from each pair. It measures pre-school children's expectancies such as "whether events occur as a consequence of their own action (internal) or as a consequence of external forces (external)". It elicits expectancies about locus of control separately, for positive and negative events. The SPIES is scored in the internal direction. Hence scores obtained are expectancies for internal control of positive events (I+) and negative events (I-) and a sum of I+ and I- gives the total score of response. Its composition is almost equivalent to IAR (Crandall, Katkovsky and Crandall, 1965). Mischel, Zeiss and Zeiss (1974) perhaps considered that locus of control for failure and for success might be relatively independent from each other and that each might afford the prediction of specified events. The test-retest reliabilities were significant at medium level (r=.47, N=58, p < .001).

From the present statement of facts it is evident that there are classical methods of studying locus of control by Bialer (1961), Crandall, Katkovsky, and Crandall (1965),
Rotter (1966), etc. But there are some recently developed methods of measuring locus of control. Reid and Ziegler (1977) reported a study in which there is correlation between life satisfaction and activity measures entitled as "Locus of Desired Control". Health related locus of control scale is also a new phenomenon which measures "health internals" and "health externals" (Kirscht, 1972; Strickland, 1978; Wallston, Maides, & Wallston, 1976; and Wallston, Wallston, Kaplan, & Maides, 1976). "Health internals" are those who express the belief that health relating to weight reduction, is determined by their own actions and are more apt to seek out health related informations. On the other hand "health externals" are more fatalistic about health. A third type of scale providing casual agents and locus of control as well as Multidimensional-Multiattributial Causality Scale (MMCS) (Lefcourt, 1978).

However, difficulties and limitations in studying locus of control are innumerable. To mention a few, measuring instruments are used in different ways which the test constructor never anticipated. Correlations are reported with the variables which are very much confusing. Some authors complicate the locus of control literature by saying that internality is good and externality is bad. Inspite of that locus of control is approached now a days as where, when, and in what ways it can retain its utility as a personality construct (Lefcourt by personal communication).
Creative Thinking

A number of studies have been made on the relationship between personality and creativity. Creative individual's cognitive characteristics, his intelligence, his interaction with others, and the way his environment affects him, his artistic thinking, scientific achievement have been studied (De Cecco and Crawford, 1977; Stein and Heinze, 1960). In most of the studies, seeking to determine the personality characteristic of highly creative persons, instruments like Minnesota Multiphasic Personality Inventory, Thematic Apperception Test, Rorschach and others have been used. But very little work have been done on creativity and locus of control. People perceive that their behaviours are controlled by themselves or other than self. What is about high creative people? How do they perceive about their own behaviour? In otherwords, whether internals are highly creative or externals, are some of the questions which are answered at the present research project.

Arnold Toynbee (1964), the historian, described creativity as "as a matter of life and death for any society. Because the outstanding creative ability of a fairly small percentage of the population is mankind's ultimate capital asset". Where as Ausubell (1968) pointed out that "creativity is one of the vaguest, most ambiguous, most confused terms in psychology and education today". These are some of the extreme
definitions of creativity. Bruner (1962) described it as creative learning and viewed it as encompassing acquisition, transformation and evaluation. Getzels and Jackson (1962) described creativity as a cognitive ability and it is reflected in performances of a series of paper-and-pencil tests.

Mackworth (1965) stressed that originality is the first stage in creativity, but not the whole process. He pointed out that the scientist who is a "problem finder" is more creative and more useful to society than the "problem solver". Paramesh (1972) described creativity as a cognitive variable. He also pointed out that creativity involves the development of something unique. Parnes (1972) put emphasis on uniqueness of creativity. He described creativity in behaviouristic terms as discriminative, manipulative, and evalulative. In other words, creativity is a function of knowledge, imagination, and evaluation. Rogers' (1970) opinion is almost the same as he emphasised new discoveries and evaluations. For example painting a picture, devising new instrument of killing or discovering a scientific theory are creative processes. To him: "It is the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people or circumstances of his life on the other". On the whole it is the Eureka feeling - 'This is it!' 'I have discovered!' Tripathi (1969) emphasizes the novelty and
usefulness as criteria of creativity. He defines
"Anything that increases the dimensions of our understanding and knowledge is to be considered as creative".

Thus, there are various ways of defining creative thinking. But most of the authors agree on one point that it is a unique and useful behaviour. It is just like an "adventurous thinking" as pointed out by Bartlett (1959). He characterizes it as getting away from the main track, breaking out of the old, being open to experience, and permitting one thing to lead another. There are also common views about creativity that it is an initiative which one manifests by his power to break away from the usual sequence of thought into an altogether different pattern of thought (Simpson, 1922).

How does the child become creative? The answer is by heredity and environment (Barron, 1970, 1972). Hagen (1962) has pointed out that a child can be more creative if his father and mother differ in their attitudes towards life so long as the differences do not create tensions between them and cause him emotional problems. Aldous (1975) observed that originality in solving problems among both boys and girls is associated with controlling behaviour from fathers rather than maternal control. Simonton (1975) stated that sociocultural factors are responsible for creative development of the individual.
Brainstorming, the term developed by Osborn (1957) and elaborated by Clark (1958) and Parnes (1967), is a popular technique for stimulating creativity. This provides skills in creative problem solving. In some other studies Parnes and Meadow (1959, 1960) have reported that brainstorming increases the efficiency in creative thinking.

There are other processes through which creative thinking is developed. "Mind-expanding drugs" and specially marijuana is one of them. Dr. Arnold Mandel (1977) suggests that "Psychiatrists are trying to get the mind and the brain back together". In an experiment he asked college students to write composition after taking inactive pills (Control group) and stimulant (experimental group). The former group wrote about two or three pages whereas the latter group wrote eight to ten pages very rich in content. Authors supporting marijuana or hashish are of the opinion that with increased use of marijuana there are the evidences of increased creativity and adventure (Brill et al., 1971; Grossman, et al., 1971; Stein, 1974). But Grinspoon (1971) pointed out that marijuana is a mild drug. It may have little or no effect on mental functioning as well as intellectual work depending on the quantity of dosage. However, there is relationship between marijuana and creativity.
Tests of creative thinking

The test of creativity measures a special aptitude of the individual. Guilford (1959, 1966, 1967a) described thinking as the divergent thinking. Convergent thinking produces the similar correct answer where as divergent thinking produces a variety of responses. According to him fluency, flexibility, elaboration, and originality are four factors of personality which constitute creative or divergent thinking. Fluency is the number of ideas, flexibility is of different category of responses, originality is the uniqueness in response and elaboration is the number of additional details to the basic ideas.

Guilford (1973) described some of the characteristics of divergent thinking viz; word fluency, associational fluency, ideational fluency, expressional fluency, spontaneous flexibility, adaptive flexibility, redefinition and originality. He developed several tests of creativity and investigated these characteristics of personality. Some of the tests are the Brick Uses Test, the Plot Title Test, the Hidden Figures Test, and the Match Problem Tests. The subject in the Brick Uses Test is asked to write as many uses as he knows of a brick. In case of Plot Title Test he has to produce novel titles. The Hidden Figures Test requires the subject to use parts of one figure in new ways to produce parts of another figure. The Match Problem Test requires the relocation of a specified number of matched to form a specified number of squares.
Getzels and Jackson (1962) test battery of creative thinking consists of verbal and numerical symbol systems. They had fine creative instruments viz, word association, uses for things, hidden shapes, fables, and make-up problem. They developed a test entitled "Playing Tag in the school Yard" in which students are to draw any picture they could imagine for this theme. A student drawing more pictures and giving much information is given high score for creativity. The system of evaluation is that of number, variety, and novelty. Although it is different from Guilford's battery yet it is synonymous with his methods of evaluation viz; fluency, flexibility, and originality respectively.

The Remote Associates Test (RAT), measuring creativity, was developed by Mednick (1962) and Mednick and Mednick (1964). Mednick and Mednick (1964) pointed out that "Creative thinking consists of forming new combinations of associative elements. The combinations either meet specified requirements or are in some way useful. The more mutually remote the elements of the new combinations the more creative is the process or solution". The test measures individual differences in creativity. It requires the subject to form associative elements into new combinations by providing mediating or connective links. The RAT contains 30 items in three sets of words or triads. An example of a set of three words is given below:

Blue ............ Cottage ............ Rat

The time limit is 40 minutes and the score is the number of right responses.
The RAT has high reliability and has been widely used. But mixed findings are reported on it. For example Mednick and Mednick (1964) have got positive results where as Andrews (1965), Karlins (1967), Yaharn (1966) have reported negative findings. However, it has moderate but significant relationship with intelligence (Wallach, 1970). The test has certain limitations. In the first place, it has cultural variability (Hood and Grinsburg, 1969). Secondly, in solving the problem the individual is required to arrive at the single correct answer which has already been known to and selected by the experimenter (Paramesh, 1972).

Torrance (1962, 1966) has developed a series of verbal and figural tests of creativity. His tests are different from that of Guilford in the sense that he emphasized the "creative thinking processes" where as Guilford's emphasis was on creative aptitudes or traits. However, Torrance has used some of the scoring procedures of Guilford viz; fluency, flexibility, originality, and elaboration. He pointed out that the scores for fluency, flexibility and originality would be summed up across all the verbal tasks where as elaboration and originality would be summed across figural tasks. Then these totals are summed in turn into the single index score of creative thinking. Again, the administrative process of tests was similar to that of Guilford. Thus, the tasks were timed and were given relatively brief time limits.

Torrance's test battery consists of following six verbal tests:
(1) Ask-and-Guess Test:- The subject is presented with some pictures and a test booklet in response to which he is to (a) ask all the questions he can think of, (b) list all the possible causes of the action he can think of, and (c) list as many consequences of the action as he can think of.

(2) Product Improvement Test:- The test contains the drawing of some toys. A subject is presented with a toy and then, is asked to list the most clever, interesting, and unusual ways of changing the toy to make it more fun to play with. The scores are obtained by the process of fluency, flexibility and originality.

(3) Unusual Uses:- The subject is to think new and unusual uses of objects like tin can and books. It is just like Guilford's "Brick Uses Test". Responses are scored for fluency, flexibility, and originality.

(4) Consequences:- There are some new problems given to subject and he is asked to answer the question "what would happen?" For example "what would happen, if man could become invisible at will?" Similarly another problem is that, "what would happen, if days were twice as long as they are?" The test has time limit and are scored for fluency, flexibility and originality.

(5) Just Suppose:- The subject is presented with a situation which is quite improbable to him. Then, he is asked to predict the possible outcomes from the introduction of a new
or unknown variable. He is to list all the exciting things that might happen if this event occurred. For example, "just suppose—when it was raining all the rain drops stood still in the air and would not move—and they were solid." Similarly "just suppose—sunshine was solid".

(6) Impossibilities Test:—This is an openended test. Students are asked to write as many impossibilities as they can think of. Responses are scored for fluency, flexibility and originality. One test for example, is that, "A cow jumping over the moon".

Torrance (1962) has developed three picture tests or non-verbal tests. They are as follows:

(1) Incomplete Figures Task:—Subjects are to complete and make an interesting picture out of an incomplete, simple, and nonsense figure and to give a title to it. This task, therefore, is called "Picture Completion".

(2) Picture Construction:—It is another type of non-verbal test. In this test a curved shape is presented to the subject. Then he is asked to think of a drawing incorporating the shape.

(3) Circles and Squares Task:—There are forms containing small circles and squares. The S has to sketch objects in or outside the circle or square.

Torrance's Test can be administered individually for kindergarten children and in a group above grade 4. For each
verbal test the items are scored for fluency, flexibility, and originality as well as for figural test elaboration, and originality. Test scores correlate so high that they can probably be considered as measuring the same thing. Cronbach (1970) has reported about Torrance's test that figural scores do not increase at all with age, and that verbal scores change very little after grade 5. The reason may be that "No doubt older persons are more inhibited in drawing than younger ones, and the individual administration of the verbal test to younger children may give them some advantage (Cronbach, 1970)."

Torrance has developed another test called "What kind of a person are you?" (Torrance, 1966b). It is a fifty item inventory of self-perception of creativity. There are five factors in it viz: acceptance of authority, self confidence, inquisiveness, awareness of others, and disciplined imagination. Bledsoe and Khatena (1974) observed the construct validity of the test battery and Joesting and Joesting (1973) found high correlation with class-room quizz, impulsiveness as well as risk taking.

Wallach and Kogan (1965; 1965a) emphasised a playful permissive task attitude to encourage the freedom of associations in creative thinking. Therefore, in order to measure creativity they have devised instruments for assessing five types of associates. Thus, the battery consists of three verbal and two visual techniques.
The three verbal techniques are:

1. **Instances:** Subject is to describe possible instances of a class of objects in verbal terms. For example, he is asked "Write all the round things you can think of".

2. **Similarities:** "Write all the ways in which a cat and a rat are alike". This is an example given by Paramesh (1972) in Indianised test battery of Wallach & Kogan to find out possible similarities between two verbally specified objects.

3. **Alternative Uses:** Subject specified possible uses for an object, for example newspaper, knife, etc.

The two techniques using visual material are; (1) Pattern meanings, and (2) line measurings. In case of pattern meaning the subject is presented with a variety of drawings in patterns and is asked to specify each drawing. In the line meaning test subject is presented with a number of drawings in the form of continuous lines. He is asked to generate meanings or interpret the lines. The test has high predictive validity (Bartlett and Davis, 1974).

There are some Indianised tests of creativity (Mehdi, 1973; Paramesh, 1972) which are being used by Indian students. Paramesh (1972) has Indianised the Wallach-Kogan instruments (Wallach and Kogan, 1965). He has substituted some words like, automobile tyre, shoe, mouse by car tyre, chappal, rat. Some words like cork, tractor, piano, type writer, curtain,
and rug were completely omitted. The scores, then, were transformed into standard score and the sum of the standard scores constituted the composite creativity index for the individual. He got high reliability and cohesiveness of the test battery.

Mehdi (1973) developed a test battery of creative thinking in Hindi in which some of the items are Indianised from the Torrance Test of Creative Thinking (Torrance, 1962, 1966). The verbal test of creativity includes consequences, unusual uses, new relationships, and product improvement. These items are scored for fluency, flexibility and originality. The non-verbal tests, which are scored for elaboration and originality are picture construction, incomplete figures, and triangles and ellipses. He found high correlations between total activity scores of each item and grand total scores both in rural and urban sample.

Gakhar and Luthra (1973) have used Torrance's (1962) verbal test of creative thinking in a sample of ninth and tenth grade Indian children and found the test-retest reliability of the test. They observed almost consistent high reliability for all the seven subjects and for complete test battery.

Locus of evaluation is perhaps the most fundamental condition for creativity. This is, as reported by Rogers (1970), the feeling of "I'm creative", or "Something created by me". This sort of feeling may be called as "internal locus
of creativity". Sometimes this feeling may shift to outside man, or God, which is called "external locus of creativity", from the man himself. Stein (1974) has reported that by shifting the locus of creativity from external to internal the man himself can be creative. Apart from the psychological reasons as described above, other reasons for raising creative thinking will be teacher's emphasis on creativity. But before that the teacher should have better knowledge and favourable attitude towards creativity (Baroody, et al., 1976; Conant, 1963). Moreover, it can be raised by training (Hadden and Lytton, 1968; Khatena and Dickerson, 1973; Meadow and Parnes, 1959; Parnes, 1976; Ridley, 1967). This has been observed in children of different age level and sex (Hadden and Lytton, 1968; Khatena and Dickerson, 1973; Meadow and Parnes, 1959). However, more enthusiastic researches are required for creative thinking and related problems on human beings.

**Cross-Cultural Studies**

When culture is described as the knowledge and symbol of an individual in a society, the cross-cultural study is an empirical study on individuals of various cultural groups. They have varying experiences which lead to predictable and significant differences in behaviour. Cross-cultural research has two advantages. In the first place, the findings relate to human behaviour in general rather than to a single culture.
Secondly, it increases the range of variation of many of the variables (Sears, 1970; Whiting, 1954).

Rath (1972) has differentiated cross-cultural studies from that of cross-national. No doubt that there are a lot of studies on personality and social psychology which are cross-national. But coming to the Indian context we find that there are inter-caste studies (Anant, 1970; Das, 1973; Das, et al., 1970; 1975; Das and Singh, 1975; Rath, 1974; Rath and Sircar, 1960; Sinha, 1975). In India there are four primary castes viz; the Brahmin (Priest and teacher), the Kshatriya (ruler and warrior), the Vaishya (Businessman) and the Sudra (Servant) (Srinivas, 1962). However, the studies have concentrated on the high caste or the upper-caste like Brahmins, Karanas, Khandayats, and the low-caste like Harijan. In some of the cross-cultural studies Rath (1972, 1974, 1979) has extended his work towards tribal, also known as girijan, living in the tribal belt of Orissa. But there are large number of socio-educational problems which are yet to be solved under cross-cultural context and to bring the empirical findings to the limelight.

Social Advantage and Disadvantage

In India the social structures are linked with economic implications and cultural dimensions. Although education, now a days, is able to bridge the gap yet the disparities are
still operating on a large scale. Apart from economic and social disparities, there are elaborate caste system in India (Das, 1973, Das and Singha, 1975; Rath, 1979, Sinha, 1975; Srinivas, 1962). It is a commonly accepted fact that the economic condition, caste, education, and place of residence constitute socio-cultural background which affect the cognitive structure of an individual (Das, 1973; Haywood, 1970; Haywood and Tapp, 1966; Jachuck, 1978; Sahu, 1978; Samant, 1975).

The concept of social advantage is considered from the social science viewpoints. It refers to the group of "HAVE"s as against the "HAVE NOT"s in the economic, social and educational fields. A child from rich, high caste, and higher educated parents is described as advantaged. In addition to this, the psychologists include improved mother-child relationship (Kagan, 1970), early education (Hess and Shipman, 1968) as the characteristic of privileged children.

The term social disadvantage, on the other hand, refers to intellectual subnormality which are attributed to unstimulating environment, lack of verbal communication with adults, lack of adult models, poor sensory experience, broken home, and poverty (Havinghurst, 1964). First attempted by Clarke and Clarke (1953) as deprived, the term has been largely used in current literature as psycho-socially deprived (Kirk, 1958), culturally deprived (Das, 1973; Das, et al., 1970; Riessman, 1962). The socially disadvantaged child has three
general characteristics during his school career: (a) decline in intellectual functioning, (b) accumulative academic achievement deficit, and (c) premature school termination or high dropout rate (Miller, 1970).

Studies supported the facts that a socially disadvantaged child has cognitive incompetence which is reflected in his intellectual behaviour (Clarke and Clarke, 1953; Haywood and Tapp, 1966). Jensen (1970) observed a correlation of .50 between IQ and SES. But some Indian studies (Das, 1973; Rath, 1972; 1974; 1979; Sahu and Mahant, 1977) indicated nonsignificant difference of intelligence as measured by RPM between advantaged and disadvantaged children. Language, being the vehicle of thought includes manipulation of verbal symbols, vocabulary, length of communication with adults, and complexity of sentence structure. Comparative studies on language between advantaged and disadvantaged children have suggested that the disadvantaged group fall below the advantaged group (Bernstein, 1961, 1965, Das, Jachuck, and Panda, 1970; Deutch, 1965; Jones and Mc Millan, 1973; Panda and Das, 1970; Rath, 1972; 1974). Hounston (1970) has pointed out that disadvantaged children have two "registers" i.e. one in school and another outside the school. He referred "register" as style of language. Recently Sahu (1979) in her study has observed that socially advantaged children were better off in the linguistic
comprehension. Since language is the key to success in academic subjects and in higher learning (Das, 1973) it is but natural that disadvantaged children fall below the normal in educational achievement.

As regards the personality style and social disadvantage some facts have been discussed in this chapter. However, this much can be added here that disadvantaged children have lower self esteem and feelings of inadequacy (Miller, 1970), more present oriented than future (LeShan, 1952), lower level of aspiration (Hieronymus, 1951; Keller, 1963; Mohanty, 1978; Rath, 1974).

Socially disadvantaged child is deprived of a number of cultural and environmental factors which, if adequately supplied, could make him normal or equal to an advantaged child. As the condition is not necessarily permanent and irreversible, early intervention and compensatory education can change the trend and the style of the personality structure of the child.
Locus of control studies on children

Locus of control study on children, perhaps for the first time, was made by Bialer and Cromwell (1960) and then by Bialer (1961) alone in a cross-cultural setting. Using the revised version of Bialer - Cromwell scale (Bialer and Cromwell, 1960) Miller (1960, 1961) studied mentally retarded children. He observed (Miller, 1961) that the ILC individual would be more sensitive to cues which are related to the effectiveness of success-approach and failure - avoidance system. But ELCs would approach the situation determining hedonic properties. For example, they would approach extra-task cues consisting of social responses of others, rewards, punishments, etc., which are present in the situation but not inherent in the task.

Mishra (1966) used Miller's scale in studying co-operative and competitive group behaviour of school children. He observed that ILC boys performed better in the co-operative situations than the competitive one where as ELCs did not differ significantly. It is because ILCs in the co-operative situation could develop group cohesion through discussions in performing a particular type of task used by Mintz (1951). Chhotray (1967) introduced reward and examined Mishra's findings. He also found same sort of results as Mishra (1966) had got.
Battle and Rotter (1963) observed the effect of class and ethnic group with the I-E control on children and found that middleclass white children were internal and lower class Negroes with high intelligence scores were more external than middle-class whites with low I.Q.

Crandall, Katkovsky, and Crandall (1965) developed Intellectual Achievement Responsibility (IAR) scale and used it for children. They observed whether a child attributes responsibility to himself or to other external sources in intellectual achievement situations. In their paper they have discussed the question of generalization, the sources of external control, and the type of reinforcement viz., positive versus negative. However, the idea they have given for studying children's locus of control has been amplified by some investigators afterwards. Using IAR scale Baron and Ganz (1972), and Baron et al., (1974) found the effect of locus of control and types of feedback on lower class black and white children. Lifshitz (1972, 1973b), Lifshitz and Ramot (1978) used IAR scale for the Kibbutz children in Israel. It was observed that there were no significant correlation between IAR and judgement of their academic ability. Studies revealed the extent to which the development of children's LC is affected by differing levels of parental contact and educational ideology and practices. IAR scale for studying locus of control

Nowicki - Strickland scale for children. (Nowicki and Strickland, 1973) was used in observing school achievement of I - E children. They also observed black children being more external than whites. Nowicki and Walker (1974) compared Rotter’s level of Aspiration Board (Rotter, 1942) with I-E control and observed that those who perceived themselves to be internally controlled achieved more than their counterparts. Using IAR scale Finch, et al. (1975) observed the relationship between ILC and achievement and Nelson, et al. (1975) observed emotionally disturbed children were more external than normals.

Mischel, Zeiss, and Zeiss (1974) measured pre-school (nursery) children’s locus of control by using Stanford Pre-school Internal-External Scale (SPIES) and made precise predictions of persistence. They found that internality for success was associated with persistence at activities which are instrumental to the achievement of valued goals but internality for failure was associated with behaviour.
aimed at avoiding aversive circumstances. They also observed that internality for success was positively related to persistence in obtaining larger and delayed prizes whereas internality for failure was not related to the children's choices.

Stephens and Delays (1973) studied pre-school children in high SES and low SES context. They found that children from poor homes were more external than middle-class children. But within lower SES there are homes above poverty line whose children were less external than children from homes below poverty line. They also observed that black and white children from low SES did not differ significantly in locus of control expectancies. Sinha (1972) made a study on internal-external reinforcement as related to sex and achievement values using Indian High School children. It was observed that males are more internal than females. It was also observed that internals have high level achievements than their external counterparts.

Locus of control has been studied with orthopedically disabled school children. Jones (1974) observed school achievement and interpersonal relationship with locus of control taking orthopedically disabled children as subjects. But the relationships were not significant. Finch and Nelson (1974) used emotionally disturbed children...
to find out the relationship between locus of control and anxiety. They observed that locus of control was significantly related to anxiety.

**Locus of control and Cognitive functions**

Locus of control has been linked with some of the cognitive functions. Miller (1961) observed in a learning situation ILC subjects were more sensitive to intratask cues where they could get direct knowledge of results of their efforts where as ELCs were sensitive to the extratask cues consisting of social responses, rewards and punishments. The observations of Butterfield (1965) corroborates with the study. Wolk and Du Cetse (1974) examined intentional and incidental learning measures. While asking subjects to find out typographical errors (intentional) they enquired about story content (incidental) from a reading material. They observed that internals found more typographical errors, recalled more story content, recalled more dates when instructed to, and recalled more names than externals. The differences were statistically significant. Studies on locus of control and verbal conditioning are reported by Getter (1966), and Alegre and Murray (1974). They observed that internals resist the attempts to condition their behaviour more than externals. Memory for success and failure was measured by Efran (1963) who observed that externals forget failures less frequently than internals. The internals were
attaching reward value for success and as such, they tended to resort to forgetting as a defense against negative reinforcement. Powell and Centa (1972) observed that internals are associated with greater mental ability.

A study on Locus of control and cognitive activity was made by Seeman and Evans (1962). They interviewed some tuberculosis patients and found that externals (Rotter’s I-E scale) had less knowledge about tuberculosis than internal patients. About the effect of feedback on locus of control Mishra (1978) made a study and found that feedback was effective on performances of ILC boys and girls in undergraduate level.

Under cognitive functions Davis and Phares (1967) studied the activities of subjects in influencing another person regarding his attitudes towards Vietnam war. They observed that internals have more data gathering for influencing others than externals. In another study Phares (1968) observed that internals made better use of information and took decisions better than externals. They also take more time to make decision as the difficulty of task increased (Julian and Katz, 1968). In a co-operative and competitive group work Mishra (1966) observed that ILCs did better in the cooperative situation. It was because they discussed among themselves how to solve their problems before they could take decision. But it was not found among ELCs.
In a risk-taking task Ducette and Wolk (1972), Liverant and Scodel (1960) found that ILC subjects made more intermediate probability bets than ELC subjects who preferred low risks. They also observed that ILCs were more cautious and less variable in their achievement.

Locus of control was studied with need achievement measure of McClelland and achievement motivation (Durand and Shea, 1974). They observed significant relationship with ILC. Activity scores of ILCs were significantly higher than those of externals and as such they are more active.

Attention as a cognitive function has been studied by Lefcourt and Wine (1969). They observed that subjects were attending persons with whom they wanted to be familiar. They concluded that internals were more likely to attend cues which would help to resolve uncertainties. The uncertainty could arouse more curiosity and attentiveness among internals than among external subjects. Rotter and Mulry (1965) reported that internals devote more attention to decisions about skill-related matters than do externals.

Lefcourt, Lewis, and Silverman (1968) used Level of Aspiration Board and tried to find out subject's expectancies concerning skill-chance nature of the task. They found that internals were more cognitively engaged when they perceived the level of aspiration task as skill demanding. They have taken more time in decision making. Mishra (1976)
observed that in a task of sensory-motor learning the level of expectancy of ILC subjects were significantly higher than that of ELC subjects in either sex. Burlin (1976) studied locus of control and occupational aspiration of female students and found both the factors are significantly related.

Intelligence, an important aspect of cognitive functions, has been studied with locus of control (Bialer, 1961; Crandall, et al., 1962; Miller, 1960a). With some retarded children as subjects Miller (1960a) found high relationship between ILC and intelligence measured by Peabody Picture Vocabulary Test. Using the same test of intelligence Bialer (1961) found that the relationship was .56 (P < .01) between mental age and locus of control and .37 (P < .01) between chronological age and locus of control. Crandall et al., (1962) have reported that internals spent more time in intellectual free play activities, demonstrated greater intensity of striving in intellectual freeplay pursuits and secured higher scores in intelligence. But Mishra (1974) did not find a significant correlation coefficient between locus of control and Raven's Progressive Matrices.

Locus of Control studies on social context

Locus of control is determined by parental affection, approval, protection, and babying (Chance, 1965; Davis and
Phases, 1969; Katkovsky, Crandall, and Good, 1967)

Katkovsky, et al., (1967) observed that parental nurturance was strongly related to children's IAR scores ($r = .64, P < .001$), the more internal children having more babying mothers. However, babying was related to internality for failure ($r = .68, P < .001$) whereas, the internality for success was significant but lesser magnitude ($r = .44 P < .01$). Similarly, internality in the IAR scale was related to general protectiveness, affectionateness, and approval. Davis and Phares (1969) compared parents' attitudes about child rearing, children's reports of parental behaviour, and the parents' own locus of control scores with those of their children by using Rotter's I-E scale. They observed that parental restrictiveness and directiveness inculcated external control expectancies in children. They also found that internals recalled their parents having more positive involvements with less rejection.

Shore (1967) used Bialer's (1961) and Battle and Rotter's (1963) scale and observed that children's locus of control scores were more related to their own descriptions of parental behaviour than to their parents' self-reports ($r = .22, P < .01$). Lewis and Goldberg (1969) studied the mother-child interaction on generalized expectancy. Mother's responding to child's signals not only provides him with stimulation and a source of direct reinforcement of
for his behaviour but also sets up conditions under which a generalized expectancy of internal nature can begin to develop. But, however, independently assessed parental attitudes were found to be largely unrelated to children's I-E scores (Katkovsky, Crandall, and Good, 1967).

Locus of control and its relationship with alcoholism and smoking behaviour have been investigated by many authors. Goss and Morosko (1970); Oziel, et al., (1972) found that alcoholics are more internal. Costello and Manders (1974) obtained extremely low scores on the I-E scale for drinking groups. Nowicki and Hoppen (1974) had male and female alcoholics as their subjects. They found that female alcoholics had significantly more external scores. Studies on relationship of internal-external control with smoking habit were reported by James, et al., (1965); Straits and Sechrest (1963). Their observations were that nonsmokers and even who left smoking were internals. But it was not true in case of female subjects (James, et al., 1965).

Locus of control has been studied in relation to political affiliation of the subject (Gorman, 1968; Johnson, 1961). Gorman (1968) found that his students who were supporters of political leader of the Democratic National Convention were disappointed when he was defeated. Then they were disillusioned with the political process. On the
same day he got scores upon Rotter's locus of control scale and found that the students were more external than the national norms for university students at that time. However, he did not have repeated measures of the locus of control scale. But Jonson (1961) found no significant differences in I-E scale scores between two groups of students supporting two political leaders. Levenson and Miller (1976) conducted studies to examine the relationship between a multidimensional measure of locus of control and sociopolitical activism. The results indicated that for liberals, increase in expectancies of control by powerful others are positively associated with increased activism. On the other hand, for conservatives, there is a negative relationship. About locus of control and the administrative position Harvey (1971) found that the longer a person holds an administrative office in the upper level of government, the more internal he scored on Rotter's locus of control scale.

Marital status and birth control were studied in relation to locus of control. Boor (1974), MacDonald (1970) observed that unmarried female subjects were externals on Rotter's I-E scale. They reported that premarital coitus and birth control practices were less favoured by externals than internals. In a study in India Corment and Paliwal (1973) obtained scores on Rotter's I-E scale, attitude
regarding contraception and other personal data from vasectomized and nonvasectomized factory workers of New Delhi. It was observed that those in favour of contraception were more internal than those against it.

Hines, Koeppel, and Jacobs (1974) studied geographical mobility with locus of control as a variable. They found that scores on Rotter's I-E scale were related with geographic mobility. Internals favoured the mobility more than external subjects.

Internal and external control as determinants of social influence was observed by Phares (1965), and Ritchie and Phares (1969). Phares (1965) found that internals are able to exert more influence upon others than externals. They are more effective in influencing the attitude of others. It is because of the fact that they are in control of their own behaviour reinforcement sequences. Mishra (1966) found that internals could influence others more than externals in a cooperative group behaviour. Ritchie and Phares (1969); Sherman (1973) found that externals tend to rely on others in social influence situations. But internals are more likely to react negatively when they are influenced.

Relationship between locus of control and task leadership was found out by De Bolt, et al., (1973). They have given a task to do in a group along with Rotter's locus of control questionnaire to both male and female
subjects. They found that leaders tended to show a belief in internal control and followers in external control in each sex group. Ferguson and Kennelly (1974) studied the authority figure in relation to locus of control. They found that internals perceived authority figures as more encouraging and constructive. It is more supportive when difficulty is encountered, and as such, positive reinforcing.

There are some relevant studies on locus of control and socio-economic status (Batter and Rotter, 1963; Franklin, 1963; Gruen, et al., 1974; Stephens and Delys, 1973b; Zytkoskee et al., 1971). It is almost a common observation that lower socioeconomic level children are more external whereas children of affluent, advantaged or higher socioeconomic class have a significant relationship with internality.

Locus of control, ethnic, cultural, and cross-cultural studies

Variables like socio-cultural and ethnic differences are potent determinants of an individual's locus of control structure. But relatively very little work has been done in this respect. Studies on Negro and Whites were conducted by Battle and Rotter (1963). They found that the interaction of social class and ethnic group was highly related to internal external control attitudes. Lower class Negroes were significantly more external than
middle-class Negroes or Whites. Lefcourt and Laduing (1965a, 1966) reported that blacks were more external than whites. But the magnitude of the difference was not great. The idea of Negroes' externality than whites are confirmed by other studies too (Dean, 1969; Franklin, 1963; Williams and Stack, 1972). On the otherhand, there are a few studies in which it is reported that social class, ethnic and cultural group has no effect in I-E control (Gore and Rotter, 1963; Katz, 1967; Kiehlbauch, 1968; Soloman, et al., (1969).

In a cross-cultural study Das and Singha (1975) observed I-E control in Brahmins and Harijans, the highest and the lowest in the caste hierarchy in India respectively. They found no significant differences either in adult I-E scale (Rotter, 1966) or in children's IAR scale (Carandall, Katkovsky and Crandall, 1965). Using Rotter's I-E scales Parsons and Schneider (1974) found that university students of the Hindus and the Muslims possess the internal attitudes.

Carment (1974) compared the I-E control of Indian factory workers and university male students with that of Canadian counterparts. It was observed that average overall scores of Canadians were significantly more external than those of Indians. However, Canadian students were significantly more internal than Indian students on personal control factor, but more external on the control ideology factor and system control factor.
Some studies on locus of control have been reported on the students of the USA; Japan, Australian, Swedish, and New Zealand (Garza and Ames, 1974; Mahler, 1974; McGinnies and Ward, 1974; Sachrest, 1976). Using Rotter's I-E scale over Anglo and Mexican American college students Garza and Ames (1974) observed that American subjects were significantly less external. Using the same scale Mahler (1974) found that American students scored in a more internal direction than the Japanese. McGinnies and Ward (1974) compared locus of control (Rotter's I-E scale) of Australian Japanese, Swedish, U.S., and New Zealand university students. They found significant interaction between I-E score and nationality.

Jahoda (1974) studied supernatural beliefs along with the I-E scale (Rotter, 1966) to throw some light on the nature of the cognitive structure among Ghanaian and American university students. It was observed that high score on external control was associated with high supernatural beliefs. Lifshitz (1972); Lifshitz and Ramot (1978) studied locus of control in Kibbutz (Israel) children. Lifshitz (1972) in her study found no significant relationship between I-E scores (Crandall et al., 1965) and judgement of academic ability and success in study habit. But in a later study Lifshitz and Ramot (1978) found that Kibbutzian girls who were brought up with intimate early contact with
parents (familial sleeping arrangement) were found to be less internal than those who had raised under an ideology espousing more peer-group autonomy and lesser contact with parents (communal sleeping arrangements).

**Locus of control and some personality variables**

It is reported that individuals having external locus of control experience more anxiety than internals (Burns, Brown, and Keating, 1971; Feather, 1967; Goss and Morsko, 1970; Naditch, 1974; Naditch, et al., 1975; Powell and Vega, 1972; Strassberg, 1973; Watson, 1967). Similarly, externals experience more fear than internals (Farley and Mealiea, 1972; Midgley and Abvams, 1974; Mealiea, 1972; Midgley and Abvams, 1974; Mosher, 1965). But LC has no relationship with extreme or phobic fears (Farley and Mealiea 1972). In a study on locus of control and ESP Bronzaft (1972) observed that the relationship was .40 (P < .01). It was also found that externals did better than internals on the ESP task.

Lefcourt and his colleagues (Lefecourt, Antrobus, and Hogg, 1974) studied humour as a function of locus of control. They observed that humour viz; creating jokes, smiles, laughter, and humour responses seemed to be most common among internal subjects who were senior high school and university students.
Stress was found to have certain relationship with locus of control (Bryant and Trockel, 1976; Lefcourt, 1978; Murphy and Moriarty, 1976). Bryant and Trockel (1976), Murphy and Moriarty (1976) observed that life stresses during early childhood and pre-school age have led the individual to highly external control orientations at adulthood. But Lefcourt (1978) summarized a literature focused upon locus of control as a mediator of responses to stress. He described that a survivor from the air crash could recover many of his bodily functions through deliberate effort and self-administered therapy. When he was tested, he was found as potentially internal.

Interestingly enough, locus of control has been studied on variables like suicide (Melges and Weisz 1971) and cheating behaviour (Srull and Karabenick, 1975). Persons who had attempted to commit suicide were asked to reconstruct their state of mind immediately prior to their suicide attempt. Melges and Weisz (1971) observed that the greater was the externality, the greater was the despair leading to suicide.

In case of persons who are emotionally disturbed and depressed are found to be more external than their normal counterpart (Klinger, 1977; Nelson, et al., 1975). Similarly, schizophrenics scored as significantly more external in Rotter's I-E scale (Lottman and Dewolf, 1972)
Langer and Rodin (1978) and Rodin and Langer (1978) studied institutionalized elderly residents and found the difference that some of them could influence the surrounding and could get maximum satisfaction whereas others could derive satisfaction through the largesse of the institution staff.

In sum it is reviewed that LC variable is observed in children, adults, across different SES, cultures and so on. Under some circumstances the scores viz; ILC and ELC produce visibly different effects and in some other cases it does not influence. Of course, there are very few studies on I - E control in India. The studies have not covered at the same time the tridimensional subcultures such as urban, rural, and tribal with bi-dimensional SES in each subculture. Moreover cultural difference in the west, for example difference between Negro and White, is not the same in India. There are sociocultural differences. Therefore, the curiosity is developed to determine the sociocultural influences on personality.

Locus of control and educational achievement

Locus of control has been found as an important predictor of academic achievement (Chance, 1972; McGhee and Crandall, 1968; Panda and Panda, 1978; Prociuk and Breen, 1975; Wolfgang and Potvin, 1973).
Using the California Achievement Test and IAR among third-grade boys Chance (1972) found that locus of control is related with reading achievement ($r = .50, P < .01$), arithmetic ($r = .46, P < .01$), and spelling ($r = .56, P < .01$). Although Crandall et al. (1962) found the IAR questionnaire was unrelated to achievement among girls, Chance (1972) observed the significant relationship viz; .45 with reading, .51 with arithmetic, and .38 with spelling. These correlations were significant at the .01 level. Crandall et al. (1965) also observed among third, fourth, and fifth grade boys and girls that the IAR was significantly related to reading, mathematics, language, and total achievement test scores. Panda and Panda (1978) analysed the relationship separately in relation to the total achievement responsibility, responsibility for success and failure for each class from 6 to 10, each sex-group, and school subjects. They found significant and positive relationships between achievement responsibility and achievement in Oriya (mother tongue of Ss), and mathematics. But in case of mathematics for 6th class students the $r$ was not significant.

McGhee and Crandall (1968) investigated the relationship between I-E control of reinforcement and academic achievement of grade school children. They found that the prediction of girls about their achievement were consistent with their beliefs concerning both success and failure. But the performances of boys were related only to their beliefs in responsibility for failure.
Using internal, powerful others, and chance scale (Levenson, 1974) and California Psychological Inventory (Gough, 1974), Prociuk and Breen (1975) observed that internals were academically superior to externals. However, they found that the relationship between locus of control and academic performance was not direct one. Wolfgang and Potvin (1973) had female elementary school pupils as subjects and they observed that more internal females had higher average grade point and had high class-room participation than external females.

Finch et al. (1975) administered a standard achievement test and the Nowicki-Strickland locus of control scale for children (Nowicki and Strickland, 1973) to emotionally disturbed children. They observed high relationship between ILC and achievement related behaviours. Nowicki and Walker (1974) got similar results too. But Jones (1974) did not find relationship between the two variables, tried on orthopedically disabled children as subjects. However, using the Bialer - Cromwell LC scale for children on Indian sample of urban, rural, and tribal school children across SES would be an unique feature of the study. And as such, it would be the aim of the study to find out the relationship of the two variables.
Creative thinking and educational achievement

Considerable number of studies have been reported on the relationship between creativity and educational achievement (Getzels and Jackson, 1962; Hasan and Butcher, 1966; Torrance, 1962; Yamamoto, 1964). Getzel and Jackson (1962) found that the high creative group scored higher in academic achievement than the high intelligent group. Recently Aliotti et al. (1975) observed that Guilford's creativity tests were more closely related with achievement factors where as Torrance's figural creativity test remained a distinct factor. Crawford (1974), Payne et al. (1975) found that Torrance Tests of Creative Thinking were highly correlated with school achievements. But Paramesh (1973) did not find a significant relationship between creativity and academic achievement.

Creativity and cognitive functions

Knowing, understanding, perceiving learning and problem solving are among the cognitive process involved in creative thinking (Stein, 1974). Regarding the relationship of language with creativity it is pointed out that language
is important for communication in modernised ways. Secondly, during hypothesis forming, problem solving, or testing hypothesis creative thought process are utilised. In case, the individual does not possess language with words for concepts in order to solve problems, it may be that his creative process would be blocked or distorted. In this connection the intimate relationship between language and thought process as reported by Hoijer (1954) may be referred.

It has been reported (McHenry, 1967) that the child who scores highly in creativity tests, also rates highly for suggestibility. Clark, Veldman and Thorpe (1965) pointed out that divergent thinking, measured by tests of the Guilford type, is related to high scores for anxiety and hostility. Similarly, as reported by Ausubel (1968), creative individuals tend to be original, perceptive, insightful, independent in judgement, open to new experiences, and verbally facile. Cohen (1974) studied the exploratory behaviour of boys and girls in the Kindergarten and found that it has positive correlation with creativity.

Intelligence constitute a considerable part of the cognitive structure of an individual. A number of experimenters have reported positive and significant relationship between intelligence and creativity (Aliotti, et al., 1975; Cicirelli, 1965; Hasan and Butcher, 1966; Mishra, 1976; Morse and Wingo, 1970; Paramesh, 1973; Singh, 1978; Tripathi, 1969).
But there are some other studies in which authors found that creativity and intelligence are not significantly related (Clark, et al., 1955; Crawford, 1974; Getzels and Jackson, 1962; Nijese, 1975; Sharma, 1974). Yamamoto (1965) reported small size correlation between I.Q. level and creativity. Wallach and Kogan (1965), 1965 a obtained the correlation as low as 0.10 which is hardly significant.

Cross-cultural studies on creativity

Cross-cultural studies on creativity perhaps started by Vernon (1966) who made his study on English children and Indian children living in Canada and observed that responses in different cultures were overlapping. But Torrance (1969, 1973), another pioneer in cross-cultural research, indicated significant cultural differences in creativity scores. Raina and Raina (1974) have given comparative studies of creativity test in the U.S.A. (Negro-White), Germany, Norway, Australia, India, West Samoa, Greece, and philippines. In another international study Ogletree (1971) observed cultural determinants of creative behaviours in England, Scotland and Germany. Creativity, studied on the Negro and white children, indicated no significant race difference (Glover, 1976; Taylor, et al., 1975). Comparing creativity scores between students of India and the USA, Singh (1970) opined that the disadvantaged children did not score low on verbal part of the test. But with an increased SES their abilities on flexibility and
originality could go up. However, giving some reasons for the Indo-US differences on creativity scores Hallman (1970) pointed out that Indian culture provides a few scientific and mathematical models of creativeness. But the western methods are based mostly on problem solving. Thus, the emphasis on science in the west associates creativity with inventiveness where as in Indian it is religious tradition with spiritual realization. Therefore, sociocultural factors are important to affect individual creativity. As pointed out by Simonton (1975), creative development is found to be affected by newspaper, magazine, best-seller lists, parents, change of fashion, attitudes, subculture, personality, and social context variables.

**Creative thinking and personality**

The question may arise "What motivates the individual to be a creative thinker?" Vinacke (1952) in this regard asserted that certain cognitive characteristics are essential for creativity. But they do not function in isolation rather in relation to total personality systems. Paramesh (1972) in his study on creativity and some personality characteristics has remarked that the creative individuals is neither extraverted nor introverted, and is neither high nor low in neuroticism and anxiety. He is stable in personality organisation, and is characterized by high theoretical and aesthetic values. Disciplo (1971) also studied the relationship between divergent thinking and
extraversion, introversion and neuroticism. Measuring divergent thinking of university students in terms of fluency and originality he found that extraverts are more fluent than introverts. But Cattell (1963), Cattell and Butcher (1970) observed that a creative person is a dedicated introvert. Dellas and Gajer (1970) have reported that high creatives, as compared to the low or noncreatives, manifested greater independence, dominance, autonomy, unconventionality, broad interests, and openness to feelings. This supports the findings of Barron (1965), Gakhar and Joshi (1980), Jones (1964), and Myden (1957). Raychaudhuri (1966c) observed that creative thinkers viz; professional musicians in India are more egocentric, exhibitionistic, more stimulated by frustration, and preferred activities that permitted a greater range of individualism and self expression.

With respect to sociability and interpersonal relations of creative persons there are contradictory views. There are evidences that highly creative individuals are sociable and popular with their peers (Cashdan and Garwood, 1964; Reid, et al., 1959; Rivlin, 1959). On the other hand, Getzels and Jackson (1962), Holland (1961), Lindgreen and Lindgreen (1965), and Torrance (1962) observed that creative subjects perceived themselves as asocial, "Ornery", and isolated from their peers in the classroom. Such subjects were also less accessible psychologically.
Thus, it is observed in the review of researches that creativity is affected by some cognitive functions and some personality traits. Then the question may arise whether it is affected by locus of control or not. There are very few studies relating to two variables mentioned in the literature. In addition to that there are cross cultural and socioeconomic ideas in the picture. So creativity being affected by locus of control in three different subcultures will be perhaps an unique type of study in the Indian context.

The relationship between creativity and educational achievement is observed by some authors which are mentioned in the review of literature. But the relationship in three subcultures with high and low SES may highlight some new ideas.

With these ideas in view the project has been undertaken. The details of problems and hypotheses are presented in the subsequent chapter.