

# CHAPTER I

## CHAPTER I

### INTRODUCTION

#### 1.0.0 The Present Study

The present study entitled ' A Comparative Study of Creative Thinking in Relation to Socio-Economic Status, School Climate and Classroom Behaviour of High School Students in Baroda City (India) and Bangkok City ( Thailand )' aims at comparing creative thinking of the Indian high school students and Thai high school students in relation to their socio-economic status, school climate and classroom behaviour. Generally, such studies on cross-cultural perspective of creativity have been done in relation to aptitudinal variables. It is in this context that the present attempt ventures to study the effect of non-aptitudinal variables towards creative - thinking among secondary school students in both the countries.

The present chapter introduces the problem with the help of the following captions, namely,

Concept of Creative Thinking. Importance of Recognising and Stimulating Creative Talent, Cross-Cultural Perspective on Creativity, Creativity and Socio-Economic Status. Creativity and School Climate, Creativity and Classroom Behaviour, Creativity and Sex, Need of the Present study, Statement of the Problem and Plan of Reporting.

#### 1.1.0 Concept of Creative Thinking

The serious study of creativity goes back at least to the time of Sir Francis Galton (1869), and his classic studies of heredity and mental - genius. Past studies of creativity have focused primarily on the special abilities, background and personalities of selected individuals or have concentrated on high selected samples of tangible products usually many times removed from the specific events and circumstances which occasioned their initial appearance. In U.S.A., Educationists took a great interest in the intriguing field of creativity around 1950. Thurstone, Taylor, Guilford and their associates were the pioneers in this field. Between 1957 to 1961, Buel, Flannagan, Harman, Sprecher, Steltz, Smith, Ghiselin, Sheets, Cochran, Torrance, etc. conducted a number of studies on creativity and contributed much to the knowledge of creativity.

One should begin any serious discussion of the subject of creativity with an attempt at a definition. Like many other concepts, educationists and psychologists do not have consensus about the definition and meaning of creative thinking. The best one can hope to do is to bring together some of the ideas engendered by the word "creativity" and allow them to act as a frame of reference throughout a discussion.

There are many definitions of creativity. Simpson (1922) defined creative ability as the initiative which one manifests by his power to break away from the usual sequence of thought into an altogether different thought. Concerning the problem of identification, he says that we must look for a searching type of mind, a combing mind, a synthetic mind. Such concepts as curiosity, imagination, discovery, innovation, invention, and the like are prominent in discussions of the meaning of creativity. Morgan (1953) published twenty-five definitions of creativity as seen in the literature. The consensus of these definitions points out that creativity involves the development of something unique, although uniqueness has not been well defined by the different investigators. The definitions emphasize either one or a combination

of the four aspects; person, process, press and product. Rhodes (1961) also envisaged creativity through the approaches of 'person', 'process', 'press', and 'products'. He writes that creativity may be considered from the stand point of the person (i) who creates, that is in terms of physiology and temperament, including personal attitudes, habits and values, (ii) mental processes, such as, motivation, perception, learning, thinking and communication, (iii) environmental and cultural influences, and finally (iv) products such as, theories, inventions, paintings, carvings and poems.

An empirical definitions of manifest creativity is suggested by Stein (1956) "creativity is that process which results in a novel work that is accepted as tenable or useful or satisfying by a group at some point in time". Potential creativity is suggested when an individual does not satisfy the requirements of the stated definition but nevertheless performs on psychological testings like individuals who do manifest creativity. He further stated that creativity is a process of hypothetical formulation, hypothetical testing and the communication of results which are the resultant of social transaction. The early childhood family environment - transaction facilities or inhibits creativity (Stein, 1959).

Guilford (1956b) in his model "structure of intellect" observed that creativity involved the interplay of all factors of divergent thinking on the one hand and the factors of seeing problems and evaluation on the other. Good and Markel (1959) described creativity as a quality thought to be composed of broad continuum upon which all members of the population may be placed in different degrees. He tentatively described the factors of creativity as associational and ideational fluency, originality, adaptive and spontaneous flexibility and ability to make logical evaluation.

Piers et al (1960) remarked that creativity could be taken as the capacity of the individual to avoid usual, routine and conventional ways of thinking and of doing things, and to produce a quantity of ideas and/or original, novel and useful products. They further observed that creative thinking is purposeful and goal-directed, the formation of new patterns or combination of information derived from past experiences and transplanting of old relationships to new situations or generation of new relationships. De Haan and Havighurst (1961) reported the efforts of Wilson who tried to bring to focus the diversity in the meaning of creative process as below :

1. The outflow of individual or group through which a product is structured.

2. An action of the mind that produces a new idea or insight.

3. The mental process of manipulating the environment which results in the production of new ideas, patterns or relationship.

4. The capacity to produce through thought or imagination the capacity for original work.

5. The emergence in action of a novel rational 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.

6. The mental process that involves the rearrangement of past experience with possibly some distortion, into new patterns to better satisfy some expressed or implied need.

7. The process which results in a novel work that is accepted as tenable or useful or satisfying by a group at some point in time.

8. The creative process in any process by which something new is produced - an idea or an object including a new form or arrangement of old elements.

The new creation must contribute to the solution of some problem.

Smith (1961) has opined that creativity is a process more than product. A creative person is one who is habitually engaged in the creative process. Maslow (1963) insisted on the importance of the flash of insight - the transcendent sensation itself - without reference to whether it will ever result in anything tangible. The salient issue is not the "inspired product" but the "inspired moment".

Lehois (1963) submitted, "creativity may be viewed as a complex human attribute that is manifested as a cognitive empirical process from which an original product emerges (the process unfolds within all individuals but most intensely within those who possess a creative personality)". Gordon (1961) and Koestler (1964), unlike Lehois (1963), have taken creativity as a unitary trait. Ghiselin (1963) reported the existence of verbal factors of creativity and speculated that analogous non-verbal factors of creativity might also exist. The two best definitions of creative thinking of the Utah conference statement, according to Taylor (1964) are that of Ghiselin and Lacklen. Ghiselin proposed that the measure of creative product is the extent to which it restructures our universe

of understanding. Lacklen (1957) uses the extent of the area of science that the contribution underlies : the more creative the contribution, the wider its effects. Getzels has attempted to deal with creativity along somewhat different line, giving primacy to the nature of the problem rather than to the solution. A distinction is made between - presented and discovered problem situations, the former involving a problem that is already formulated, the latter a problem that still needs formulation. The significant element in creative - performance is the envisagement of the creative problem; for it is the fruitful question to which the novel situation is the response (Getzels and Csikszentmihalyi; 1964),

Torrance (1964) defined creativity as "a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies testing and retesting these hypotheses and possible modifying and retesting them; and finally communicating the results". This definition describes a natural human process. Strong human needs are involved at each stage.

Wallach and Kogan (1965) have placed great emphasis on the creative person's store. They state : "If we assess a person's capacity to generate cognitive elements, one factor influencing his performance as a ceiling or upper bound is the extensiveness of his repertoire". Mednick and Mednick (1967) based on the associative definition of creativity which states : "creative thinking consists of forming new combinations of associative elements, which either meet specified requirements, or are in some way useful. The more mutually remote the elements of the new combination, the more creative is the process or solution."

De Bono's (1970) lateral thinking is closely related to insight, creativity and humour. It is an indefinite way of using the mind as logical - thinking, but in a very different way. He says that lateral thinking is an insight tool. It is concerned with the generation of new ideas. Vertical thinking is concerned with proving or developing concept patterns. Lateral thinking is concerned with restructuring such patterns (insight) and provoking new ideas (creativity).

Having perused the various definitions of creativity, Mackinnon (1970) explains that 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 potent abilities.

Influenced by the definitions of Good and Markel (1959), Guilford (1956) and Torrance et al. (1964), an operational definition of creativity was formulated by Passi (1971). According to him "creativity is a multidimensional (verbal and non-verbal) attribute differentially distributed among people and includes chiefly the factors of solving problems, fluency, flexibility, originality, - inquisitiveness and persistency. It may be pointed out at this stage that creative thinking is accepted to be marked by the action of mind purposefully directed to manipulate the environment with a view to create new ideas and establish novel patterns and relationships. Based upon this definition, the Passi's Test of Creativity verbal and non-verbal - (PTC) were standardized for higher secondary . -

school students (1971).

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.

Having perused the different definition and approaches of creative thinking the investigator accepts the definitions put forward by Passi (1971) and Torrance (1964) as the guidelines in the present study.

#### 1.2.0 Importance of Recognizing and Stimulating Creative Talent

Today no intellectual in the world is unaware of the importance of creativity, simultaneously they are busy in developing the ways by which the exuberant energy of the adolescents may channalize in some creative tasks.

Psychologists are busy in searching for the creative persons because they are responsible for future scientific and technological developments. Recent advances and researches in the field of creativity have lowered down the market of intelligence and intelligence tests.

If deplorable waste of human talent is to be prevented and if creatively gifted students are not to choose the paths of delinquency, mental illness, or at best a little of mediocrity and unrealized potentialities (Torrance, 1962), it becomes important that serious attempts should be made to identify creative talent. Identification and measurement of creativity will lead not only to a greater understanding of a person but would also provide a more adequate basis for accurately forecasting something about his future (Heist, 1958). Above all, the task of the educators is not to recognize creative talent after it has come to expression, but either through our insight or through the use of validated predictors to discover talents, when it is still potential and to provide that kind of educational climate and environment which will facilitate its development and expression (Mackinnon, 1963). Identification of creativity becomes more important in a developing country where there is critical demand for inventive scientists and engineers (Raina, 1974).

Creativity, "an ultimate human asset" (Toynbee, 1969) needs to be identified, stimulated and nourished during childhood, if we are serious about developing fully functioning, mentally

healthy, well educated and vocationally successful individual identification of creativity can not be left to chance (Raina, 1974).

Once the creative students and their potential fields are located, parents, teachers, counsellors and those who have concern<sup>ed</sup> for the student and the nation, have to think of ways and means to encourage and foster creativity. Restricting the educational situation in the school, it is required, in general, that the aims, curriculum, method of teaching, promotions, and rewards should be remodelled, since it is assumed that the needs of high creatives are not the same as those of non-creative students. Creative students are attracted to the mysterious, to the unknown, and to the unexperienced. They have a strong need to question, to explain, to test ideas and to communicate the results of their testing. Creative individuals, however, need outside encouragement to keep up their efforts. "Creative people have need to be valued. As a mother wishes her child to be appreciated, so creative people need valuation and love after their exertions." (Gowan and Demos, 1967). Those who are close to creative children, adolescents and adults should remember to give them such valuing (unconditional positive regard - Rogers, 1961) during and following the

creative activity. Based on this plea, educational policies should be reframed in order to preserve and promote creative talent.

In view of the above discussion, it can be concluded that identification of creativity should be given due recognition and attempts should be made to foster abilities which are involved in creative thinking. Moreover, the encouragement and development of creativity does not lie simply in school counselling, but in a charge of spirit in the educational system and in society at large. In short, "creativity and spontaneity can not be directly produced and not externally injected into an organism. But there is the possibility of bringing into existence a climate - sociological, psychological and educational - into which creativity, originality and spontaneity will blossom" (Raina, 1974).

#### 1.3.0 Cross-Cultural Perspective on Creativity

The study of creativity in cross-cultural perspective conducted by many researchers reveals the strong impact of culture on creativity. The creativity of the people belonging to different culture varies from one another to some extent. Culture is sometimes found to be the obstacle which

comes in the way of creativity.

The concept of "cultural characters" has been defined by Margaret Mead as "the regularities in the intrapsychic organization of the individual members of a given society that are to be attributed to these individuals' having been reared within that culture" (Mead and Metraux, 1953). Stein (1953) insisted that "The Culture exerts a variety of forces on the production of creative work. Through its provision or limitation of freedom it influences the opportunity of the individual to sense the existing gaps and to communicate his resolution to them. Through its child-rearing practices it may influence the individual's sensitivity and his ability to effect resolution.

The stage of development of culture helps to define the areas in which problems will be seen and the means available for solving them. Similarly the dominant philosophy of culture may not only give direction to creative strivings but may actually stimulate or impede the production of creative works. To him, "novelty" or "newness" means that the creative product did not exist previously in the same form. It may involve a reintegration of existing materials or knowledge,

but it must contain new elements. He also believes that to be creative the novel work must be "accepted as tenable or useful or satisfying by a group in time."

Mead (1959) discussed creativity in cross-cultural perspective. She analysed and documented the relationship between the forms provided by a culture and the creativity of individuals within the culture.

Creativity, it is maintained, is an original transaction between an organism and its environment, and for the most human beings the culture is which they find themselves embedded, like an insect in amber (Fabun, 1968). Culture, as Teicher (1963) believes, is the matrix and the context for creativity, in deed, it is the context for all creative behaviour. Culture, elaborated and developed, makes creativity possible, and in turn, is enriched by creativity. Discussing the importance of culture in the emergence and development of creative potential, Rollo May (1969) very succinctly observed that you can never localize creativity as a subjective phenomenon. You can never study it in terms simply of what goes on in a person.... For what is occurring is always a process, a doing; specifically, a process interrelating the person and his world.

Torrance (1967) on the basis of historical records pleads : "Historical records are compelling. How can one otherwise account for the great number of creative musicians in the period of a single century in Europe. How can one account for the preponderance of great artists and sculptors during the Renaissance? Why were there so many inventors in the late nineteenth century? Why does Australia produce so many good tennis players, and Russia so many good women athletes? Why has the past ten years produced so many outstanding Negro athletes?"

Such are the powerful influences of cultural and historical factors in the nurturance of creative development and functioning. It is because of these influences that the nature and number of creative productions showed great variations between cultures and within the same culture at different times (Kroeber, 1944).

"Creativity attributes may possible be modified in either positive or negative direction by environmental influences. These influences have included factors involved in educational settings, working conditions and climate, and training programmes", mention by Taylor and Holland (1964).

Thorstone (1952) said "Even though we are ignorant about the nature of creative talent, we can be pretty sure that it can be encouraged or discouraged by environmental conditions."

Taylor (1969) said that "The natural surroundings and cultural environments may have a bearing on the development of creativity and could thus explain differential distributions of creative talent." Since culture has such a pronounced role in creativity development, the understanding and study of cultures in relation to this important human functioning has its own right for research.

Cross-cultural psychological research as Horrocks (1972) has pointed out, is becoming increasingly common and increasingly extensive in scope. But inspite of the fact that the volume of literature on creativity has increased very rapidly since the early 1950's cross cultural creativity research is almost neglected. A survey of the Psychology of Creativity Bibliography by Hlavsa (1972) shows that only .58 percent of literature is devoted to cross cultural explorations. Most of it is buried in master's theses, doctoral dissertations, and other unpublished reports. Of the 50 completed comparative studies of creativity,

using instruments developed by Torrance (1969), only 12 have been reported in easily accessible sources. In the main, creativity research has been national oriented rather than international... Few studies have investigated the educational and cultural determinants of creative behaviour in other cultures (Ogletree, 1971).

Cross-cultural research in creativity will, perhaps, answer numerous unsolved questions in this maddeningly complicated area. Such research, as Cropley (1972) maintains, should help in checking out the universality of experimental findings, and in explaining the relationship between various cultural practices and styles and later behaviour it will provide a kind of natural laboratory, in which, for example, the variability (or absence of variability) in adult behaviours seen in different cultures can be related to differences and similarities in child rearing in those cultures. It also provides a new vantage point from which to study one's own culture. It should help in "shaking hypotheses free from particular sets of cultural entanglement" (Devereux, Bronfenbrenner and Suci, 1962). Cross-cultural research, in fact, provides new insights into one's own culture. It

also helps to discover and explain differences of behaviour and development among human beings, and thus to achieve a deeper understanding of men as a species (Manaster and Havighurst, 1972). When an experiment is conducted to discover functional relationship between variables, it should be - carried across cultures for replication. This basic methodological feature in natural sciences and in Russian psychological studies (Brackbill, 1960) is a necessary condition in educational and psychological research (Wu, 1969). It is because of these advantages that Torrance has pointed out that - comparative studies of creativity in children has a promise in pointing the way to the creation of conditions that will produce healthier, more creative people.

Torrance, who is a first line creativity researcher, is also a pioneer in cross cultural creativity research. It is he and his students who have been most active in conducting cross - cultural creativity researches. His instruments i.e. Torrance Tests of Creative Thinking have been widely used in cross cultural researches. Portions or complete batteries of the tests have been translated into the following 19 languages : Hindi, Tamil, Urdu, Gujarati, Punjabi, Chinese, Japanese,

Korean, French, German, Italian, Spanish, Tagalog, Norwegian, Western Samoan, Afrikaans, Turkish, Greek and Malayan. The test tasks bring out cultural differences, but a test task that would not elicit culture differences would not be very useful in comparative studies (Torrance, 1969).

The openness of the test tasks and the universality of the stimuli have made them - readily adaptable to different cultures and sub-cultures. Children can respond in terms of whatever experience they have had. The test tasks bring out cultural differences, but a test task that would not elicit culture differences would not be very useful in comparative studies.

Torrance (1965a), Patterns of the developmental curves and levels of creative functioning from one culture to another can be explained logically on the basis of the nurturing influences of cultures. Torrance (1967) carried out three sets of investigation : (i) a study of creative development in seven cultures; (ii) a study of the development of conformity and (iii) longitudinal studies of creative development. The seven cultures selected were : (a) United States, Dominant, advantaged, (b) United States, segregated, negro, (c) Western Australia, (d) Western Samoa, (e) West Germany,

(f) Norway and (g) India. These cultures were chosen on the basis of known differences in the way they deal with creative behaviour and encourage the characteristics judged to be essential to the development of creative personalities developed for each of the seven groups. The basic data were obtained from a battery of verbal and non-verbal tests given to the children and were supplemented with information from teachers about their teaching practices and their concepts of "ideal pupil." Sample sizes for each culture ranged from 500 to 1,000 children covering grade 1 through 6. The intercultural study found that discontinuities in development occur in most cultures and concluded that there is evidence to suggest that they are associated with the imposition of additional social demands.

He has further noted that the children in some cultures tended to perform at a relatively higher level on the figural tests, while those in other cultures performed at a relatively higher level on the verbal ones.

The German, Norwegian, Australian and Indian groups tended to perform somewhat better on the verbal than on the figural measures while the Samoan and Negro children functioned at a higher

level on the figural measured. The teacher's - responses on the ideal pupil checklist proved able, when compared with those of an expert panel asked to determine the characteristics of a creative - child, to predict the relative achievements of the difference cultures' children in creativity. The conformity studies revealed an increased tendency for children to consult with their peers at about the fourth grade, and the longitudinal study - confirms the existence of the slump in individual of creative thinking.

A cross-cultural study of 'creativity tests' with eleven-year boys was made by Vernon (1966). The short individual battery of five tests was given individually during 1965 to the following, somewhat unusual sample, totalling 230 boys. One hundred fourth-year boys in four junior schools in or near St. Albans, Hertfordshire, chosen to be broadly representative of S.E. England (age range 10: 10-11: 10, median 11:4). Twenty Hebridean boys from - predominantly English-speaking, and 20 from predominantly Gaelic speaking homes in four schools in or near Stornoway, Isle of Lewis (age range 10: 5-11 : 8, median 11:1). Forty Canadian Indians, including 18 members of the Stony tribe at Marley reservation

and 22 members of the Blackfoot tribe at Cluny reservation, S. Alberta (age range 10:1 - 11:1). Fifty Eskimo boys in Canadian North West. These included 12 at Tuktoyaktuk, a port in Arctic ocean. The remainder of the samples (38) were attending school at Inuvik, on the Mackenzie Delta. Thirteen were permanently resident in Inuvik town, while 25 were boarders brought in for nine months of the year from settlements upto a thousand miles away. Tests used were : The Rorschach Inkblot Test, The Incomplete Figures Test, The Tin Can Test, "If I could fly" Test; and 'The Dog that could not Bark' test. The results showed that there was more overlapping in the content of response between the various cultural groups than had been expected. The Hebridean samples generally resembled the English apart from low scores on the 'Incomplete Figures' Test. But Gaelic background boys showed some restriction of creative imagination on several tests. Both Eskimos and Indians, though coming from very poor economic and cultural background and being retarded in English, were often as high in ideational fluency as the English reference group, or higher, though the quality of those associations or stories was poor. The Indians in particular showed strong preservation and lack of

originality which can probably be attributed to their lack of cultural stimulation, extreme conservation and non-co-operation with the white civilisation. Eskimos, however, obtained scores on several originality variables comparable to those of the British samples. This, as Vernon believes, fits in with their greater adaptability and initiative relative to the Indian groups.

Bruinimks and Feldman (1970), Wood (1970), Barron and Young (1970), Nultall (1970) and Alamshah (1972), the identification and liberation "creative stock" under a typical cultural tag, constitutes one of the most urgent tasks in education. Because, creativity is "not only affected by culture in which the child is raised, but also by the ethnic sub-culture to which he is born, by the socio-economic position of the family in the social structure and by his early experiences in learning activity."

Torrance (1971a) enumerates the following cultural differences which hinder creative development : success orientation, peer orientation, sanctions against questioning and exploration, misplaced emphasis on sex roles, divergency equated with abnormality, clock-orientation with emphasis on speed, work-play dichotomy, overemphasis on

specialization of a limited number of talents, overemphasis on logic and reasoning as against intuition and guessing. These observations are made in the case of contemporary, American culture. Some of them, e.g. clock-orientation, may not be relevant for Indian culture.

Sallery (1968) found significant differences in Arabs and Canadians in creative responses on his tests. Jacobs (1969) has attempted to determine whether or not there is a relationship between creativity and <sup>i</sup> bilingu<sub>N</sub>alism. He reported that the Czech-Americans scored higher on the non-verbal "Uses" test than did the Americans. Using the combined score, the bilingu<sup>i</sup>al were generally higher - that is, more creative.

Ogletree (1971) made a cross-cultural examination of the creative thinking ability of public and private school pupils in England, Scotland and Germany, using a total of 1,165 third through sixth grade children (666 state and 499 Steiner school pupils), they were drawn from six states and six Steiner schools in England, Scotland, and Germany, were matched according to socio-economic background, when the data were examined by age, grade level, sex and with country, and cross-

culturally. Subjects were administered the TTCT orally in their native tongue. The battery gave scores for verbal and figural fluency, flexibility, originality and elaboration. The data analyzed by single way and two way analysis of variance produced the following results : Steiner school pupils obtained significantly (.05) higher verbal and figural scores on the creativity tests than State school pupils on a cross-cultural basis. This significant difference in scores between children of the two school systems, favouring the Steiner school was evidenced with few expectations, when analysed by social class, country, grade level, age and sex. The English sample scored significantly higher on most of the creativity measures than their Scottish and German peers. German pupils surpassed Scottish pupils on the verbal measures, and conversely, Scottish pupils outscored German and English pupils on the figural measures.

Using middle and working class families in Bombay, India, Minneapolis, Minnesota and San Juan, Puerto Rico numbering 64, 64 and 45 respectively, Strauss (1968) tried to investigate the comparative performance of these two groups in each culture on an experimental problem situation. The problem presented to the family, and modified to suit local

conditions in each society, was a puzzle in the form of a game played with pushers and balls. . In all the three societies, middle class families exhibited greater creativity, (i.e. large number and range of ideas for solving the problems) than did the working class families.

Strauss and Strauss (1968) theorized that children's creativity varies according to which the child family role require conformity to conventional norms. Creativity was measured by the ability to generate ideas which might solve a puzzle presented to family groups. Data for 128 Indian and American families showed that the Indian children had lower scores than the Americans. It is concluded that individual creativity is likely to increase as societies move toward a less restrictive normative code.

Making an exploratory comparison between Amish and Urban American school children Lembright and Yamamoto (1965) used a battery of tests of creativity thinking with 43 Amish and Urban American children in the fourth, fifth and sixth grades. Results showed both qualitative and quantitative differences in these two groups' performance, obviously reflecting their respective environment and sub-cultures.

Mari (1971) designed a study with a view to compare modern American with traditional Arab rural eighth grade students in their creative ability. The comparison was three-fold : determining cultural differences in creativity, sex differences within and between groups and within group variation. These differences were examined in light of the groups' different socio-cultural backgrounds considering particularly the factors of socialisation and cultural values, family structure, and level of technological development.

Sixty American (30 male and 30 female) and 60 Arab (30 male and 30 female) eighth-grade students from farming families in rural areas were subjects. All subjects were administered Torrance Tests of Creative Thinking. The results indicated that overall, American subjects performed significantly better than Arab subjects in all problems, although on two out of the thirteen specific scores the differences were not significant. These are fluency in unusual questions and fluency in picture completion.

Cross-cultural research of Mexican and American students, of approximately the same age and academic attainment, was conducted to determine

the  
/ Mexican seminary students' relative causal and -  
creative thinking skill (Stevens, 1970). Creative  
and causal thinking factors were treated statisti-  
cally by the least squares analysis of variance.  
No significant differences were found for the main  
effect : nationality for the fluency, flexibility,  
or originality factors as measured by the Torrance  
Tests of Creative Thinking or for the causal thinking  
factor of the BARSIT. The null hypothesis of no  
significant difference between Mexican and American  
students in creative thinking skills was not rejected.

Using his "Ideal Pupil Checklist," Torrance  
(1965) studied teachers and other educators from  
five rather distinct cultural groups. The United  
States sample consisted of 264 educators in the  
Buffalo, New York area. Since the rankings of this  
group correlates highly with the ranking of teachers  
in other States of the U.S., Torrance concluded that  
they were obtaining a measure which possesses a great  
deal of cultural commonality within the Unites States.  
The German sample consisted of 94 elementary and  
secondary teachers in Berlin, the sample from India  
consisted of 375 elementary and secondary school  
teachers in Baroda area, the Greek sample consisted  
of 94 teachers in the area around the city of Volos,  
and the Philippine sample consisted of 147 teachers

in training centres. In order to measure each set of rankings against the expert ratings for the Ideal Creative Personality, each set of rankings was transformed into the Q - sort distribution and then correlated with the expert ratings by standard Q - sort procedures.

Missing from all except the United States and German lists are such characteristics as - 'independence of thinking' and 'independence of judgment'. Curiosity ranks high in Baroda group, but does not enter the top ten characteristics of the Greek and Phillipines teachers. In the Indian list, however, 'curiosity' is immediately followed by 'obedient' 'does work on time' and 'courteous'. 'Remembers Well' appears in both the Greek and Phillipines lists, but not in any of the others.

Coefficients of correlation were computed between the composite ratings of each culture with the expert sort, since it was felt that a better index of the extent to which the values of each culture conform to creative values as measured by expert sorts of the Creative Personality, could be obtained. All of coefficients of correlation are low, indicating that according to expert judgment, all five of the cultures contain values which are

inimical to creative development and behaviour. The United States and German teachers appear to have less than the other groups, however, with India, Greece and the Phillipines following in that order.

Concluding the results, Torrance observed that all five cultures according to this standard, may be unduly punishing the good guesser, the child who is courageous in his convictions, the emotionally sensitive individual, the intuitive thinker, the individual who regresses occasionally and plays or acts childlike, the visionary individual and the person who is willing to accept something on mere say - so without evidence. On the other hand, all of them may be giving unduly great rewards for being courteous, doing work on time, being obedient, being popular and well liked and being willing to accept the judgment of authorities.

Raina (1972) attempted to make a cross-cultural study of college teacher perception about creative student using University of Indore teachers and <sup>student</sup> teachers.

Besides this comparison, rank order correlations were worked out between the ratings of Indian teachers and teachers from other countries. Correlations were also run with the expert ratings. Results, by and large, support the earlier findings.

Anderson and Anderson (1961) have been concerned with the effects of what might be called a "national personality type" on children's responses to open-ended stories. They have been interested in creativity from the point of view of social creativity in human relations. Using Anderson Incomplete Stories each depicting a conflict between a child, his teacher, his parent, neighbour, or peer; they have gathered data from large number of children over 10,000 in fourth and seventh grades from eight countries : England, Finland, United States, Sweden, Norway, Mexico, Brazil and Germany. They have found large and significant different consistent with their hypotheses about the impact of the culture on - creativity.

The previous studies help to conclude that cultural dimensions influence creative thinking. Nevertheless, it would be interesting to know if there would exist differences in creativity between cultures having more or less same level industrial development and belonging to similar geographical settings.

#### 1.4.0 Creativity and Socio-Economic Status

Many studies have been conducted to establish the relationship between socio-economic status and

creativity. Among them different investigators have obtained different results. Some of them are given as under. Reid, King and Wick Wire (1959) stated that students from upper class found more creative than of lower class.

Family background, education of parents, position of fame and honour held by the parents or others at home, in community and neighbourhood, feelings 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 (Roe, 1953; Weisberg and Springer, 1961; Mackinnon, 1965; Schaefer and Anastasi, 1968; Oden, 1968).

Torrance and Smith (1962) found middle class youngsters to be more creative on verbal tasks than lower class youngsters and converse was true for non-verbal tasks. Torrance felt that creativity test not only measure a different dimensions of cognition but the testee is less effected by his socio-economic background. Smith (1965) reported positive relationship between socio-economic status and verbal creative score and negative relation between scores on the figural tasks and socio-economic status.

Pareek (1966) made an investigation with the purpose to study the development of creative thinking with respect to socio-economic status. This study showed that socio-economic status has significant role to play to determine creative thinking.

Raina (1968) studied 500 students of three educational zones of Rajasthan. He found out that significant differences were noted in SES of high creative and low creative on all three dimensions of SES scale used.

Singh (1970) found that with increase of SES, flexibility and originality increase. The results of Paramesh (1970) indicated that (i) The high moderate and low creative groups differed among themselves only with reference to economic values, (ii) The high creative group was significantly low on economic value as compared with the low as well as moderate creative groups.

The analysis of test results obtained by Ogletree and Wilma (1973), on creativity, demonstrated a positive correlation between social class status and creativity. The total upper class sample from England, Scotland and Germany scored significantly higher than their lower middle class and lower class peers on all creativity variables at the .01 level

of significance except for figural flexibility where difference was not significant. Pupils from middle class background also excel their lower class peers at the .01 level, but only on verbal, originality, flexibility and the total score and non-verbal (figural) score. Thus, the upper middle class socio-economic status score was higher than the middle class socio-economic status, in comparison to lower class socio-economic score. This shows that the wider the socio-economic gap between children from different social class background, the greater the difference in their ability to perform on test of creativity.

In the above study on figural (non-verbal) variables the difference between girls of different social classes and boys of different social classes was not significant, although upper class girls obtained higher figural score than middle and lower class girls. The results of this study support the contention that creativity is a function of socio-economic status. The findings of lower class backgrounds do better than their higher socio-economic peers on the non-verbal creativity.

Johnson (1973) examined (a) the effect of immediate and delayed reward instructions of -

performance on figural (non-verbal) Form A of the Torrance Test of Creative Thinking and (b) the possible interaction between the reward conditions and <sup>socio-</sup>economic status and between reward conditions and grade levels. The subjects who received - immediate and delayed reward instructions scored approximately the same and significantly higher than subjects who did not receive any reward instructions. There were no main effects of grade levels or economic condition. The only significant interaction was reward condition with socio-economic status.

Pandit (1976) has found that the students of upper socio-economic status were having significantly higher scores than the students of middle and lower middle status in the dimensions of fluency, flexibility and originality as measured by Verbal Test of Creative Thinking by Bager Mehdi.

Researches in the area of creativity seemed to conclude that social class influence creative thinking to the same extent as it does intellectual development and school achievement. Rossman (1931), Knapp and Goodrich (1952), Roe (1952) and Repucci (1962) found creatives more likely to come from middle class families, possessing, perhaps, thereby above average I.Q.

The review of studies on socio-economic status and creative thinking has presented the various opinions and different results. Most of these studies are reported from abroad. There was no study aiming at comparison between Indian and Thai in the context of socio-economic status and creative thinking. Moreover, the findings - reported above were not clear cut, therefore, it was decided to study the relationship between socio-economic status and creative thinking of high school students in Baroda City and Bangkok City.

#### 1.5.0 Creativity and School Climate

Next to home, the school climate is very important for the growth and development of creative abilities in a child. Obviously, a child spends a considerable portion of his most formative years in an environment which is radically different from his home environment, and this leaves an everlasting impact upon him. Unlike his home, however, the school environment is so vast that researchers have invariably faced peculiar difficulties in assessing precisely what is in a classroom in the school which can influence creativity of a child. As such, most of the results or hypotheses are entirely 'a matter of conjecture and tentative' (Freeman, Butcher and Christie, 1971).

There is strong evidence which indicates that creativity does not just happen. The conditions for creativity will have to be carefully nourished if we want more creativity to be demonstrated (Hilgard, 1959; Torrance, 1962; Murphy, 1966). The propitious environment for creativity is the "Open System" (Anderson, 1962). As distinguished from closeness, openness designates those characteristics of the environment, both the inner and the outer, the personal and the social, which facilitate the creative person's moving from the actual state of affairs which he is in at a given time toward solutions which are only possible and as yet undetermined (Hallman, 1963).

Children can be helped to inculcate and preserve such characteristics and conditions and thereby develop creativity by non-authoritarian attitudes on the part of parents and teachers and by providing a responsive environment. A responsive environment means "building an atmosphere of receptive listening, relieving the fears of the overtaught and overguided, fending off devastating disparagement and criticism, stirring the sluggish and deepening the superficial making sure that every sincere effort brings enough satisfaction to assure continued effort, heightening sensory aware-

ness, and keeping alive the zest for learning and thinking" (Torrance, 1963).

Published research on school climate and creativity is scanty. In his studies of social climates in ten high schools, Coleman (1961) found in the social climates evidence of forces that inhibit and facilitate various kinds of achievement among pupils. He suggests that changes be made in the reward structure of high schools to shift from interpersonal competition to intergroup competition in which group rewards reinforce achievement. The work on creative school environments by Walker (1967; 1969). In comparison with traditional schools, he found that high creative schools have psychological environments characterized by high aspiration level, high intellectual climate, high student dignity, high academic achievement, low group life, low academic organization, low social form, and low social climate. The teachers in these schools were found to be less authoritarian, more adaptive, flexible, outgoing, permissive and nurturant. In the classroom, teachers were more stimulating and original; students were more initiating.

Mc Pherson (1964) describes organizational structure, management policies, types of supervision,

time schedules, etc. school climate. Halpin and Croft (1956) developed the instrument called - Organizational Climate Descriptive Questionnaire (OCDQ) with the help of which the organizational climate of the school as affected by the leader (principal) behaviour can be studied.

In a school characterized by open climate, for instance, the leadership acts emerge easily and appropriately from both the group and the leader and an element of 'authenticity' permeates the climate. On the other hand, in a controlled climate there is little attention paid to behaviour oriented towards social needs satisfaction and climate betrays a lack of 'authenticity'. On the other extreme again, in a school characterized as of closed climate 'authenticity' is wholly lacking and the leader is prohibitively dominating. Jackson (1962) said that the quality of intellectual activity on the part of the teacher involved in preactive teaching much - depends on the stimulation he is getting from the school environment. Speaking about the preactive teaching, earlier he says, that it is almost integral part of teaching as such. The school climate that he speaks of should be nothing but the organizational climate.

Elizabeth (1963) reported that freedom and - order, properly proportioned, are conditions necessary for the emergence of creativity. Too much order and too little freedom hamper the creative activity : too little order and too much freedom impede the actualizing of creative act into creative product. There must be enough freedom to challenge the individuals creative potential and enough order to provide him the means to actualize this potential. Such a balancing of freedom and order generates a nurturing climate for creativity. An authoritarian climate is high in order and low in freedom; a laissez-faire climate is high in freedom and low in order and a democratic climate is high in both freedom and order. Consequently it nurtures well creativity.

Vernon (1964) observes that "some schools do much more to stimulate and foster, or else to inhibit, creative talent than others." Hasan and Butcher (1966) report that the success of predominantly divergent thinkers is directly related to the degree of freedom and permissiveness and the lack of authoritarian discipline within a school. Haddon and Lytton (1968) found that the informal schools provide an environment which develops qualities of personality that result in a high level of divergent thinking

ability. The "informal" schools in their study have "a relaxed, friendly atmosphere in which children move freely, both within the classroom and in the school generally. Particularly noticeable is the freedom of access to the libraries and the extent to which children work in them unsupervised." The "formal" schools are not "unfriendly", but one senses a tighter reign and a firmer directive. Classwork is more in evidence. This superiority of the informal schools held up in the follow up study conducted four years later by the same authors (1971).

Raina (1971) has similarly found the eighth and ninth grade students in "creative" school climate performing better on the TTCT variables than their peers in a 'non-creative' school climates. But Mann (1966) reports no difference on the TTCT produced by "climate for preconscious freedom." Degree of indirectness of control has been noted to be related positively to performance on the TTCT by Weber (1967), Soar (1968), and Rappel (1970). However, Mackinnon (1967), based on his biographical studies of creative persons, is not for all permissiveness on university campuses, but prefers an atmosphere of "both structure and freedom carrying with its expectations of reasonable and responsible action."

The type of school or institution in which a child is studying and the intellectual climate therein have been shown to be directly related to child's creativity level (Snyder, 1976; Heist, 1967; Haddon and Lytton, 1968; Barker Lunn, 1970).

It is obvious that the school organizational climate responsible for the educational outcomes is the result of leader (principal) and the group interactive behaviour. If one were to diagrammatically visualize the successive spheres which may plausibly have either immediate or ultimate influence on the classroom climate perhaps, next to teacher classroom behaviour comes the periphery of organizational climate of the school which in turn the interaction between these two factors affects the creative thinking of students.

#### 1.6.0 Creativity and Classroom Behaviour

Among the institutional environment factors affecting creative abilities, the role of classroom interaction between teacher and the pupils is very important (Soar, 1968; Flanders, 1970; Rappel, 1970; Johnson, 1970; Martin, 1971; Penick, 1973; Gupta, 1975). The question-asking behaviour of teacher (which may be either divergent or convergent depending on whether narrow factual (reproductive) or open

(productive) questions are asked) seems to have a direct bearing on creativity (Burkhart, 1962; Torrance and Hansen, 1965; Flanders, 1970). Morgan (1967) has studied the relationship between personality and teacher behaviour alongwith creativity factor also. The purpose of his study was to determine, if selected personality traits and creativity factors correlate significantly with certain categorized behaviours occuring in classrooms of secondary school social studies student teachers. The sample consisted of thirty four Purdue University secondary social studies teaching majors who did student teaching during the spring of 1966 semester. The Guilford - Zimmerman Temperament Survey (GZTS) and the Creativity Self - Rating Scale were administered to subjects prior to student teaching. Personality traits measured by GZTS included General Activity, Restraint, Ascendance, Sociability, Emotional Stability, Objectivity, Friendliness, Thoughtfulness, Personal Relations and Masculinity. Creativity factors measured by the Creativity Self - Rating Scale included Gross Creativity, Ideational Fluency and Flexibility. Interaction Analysis Record, a modification of Flanders Interaction Analysis Technique was used by Purdue University Supervisors of secondary social studies student teachers to categorize classroom behaviours. He has found that Sociability, Gross Creativity (Self-

rating) and Masculinity were the most frequently appearing correlates in reduced sets for the various criteria. Significant Rs for reduced sets for both administrations of the category. Praises or Encourages; the second administration of the categories, Accepts Feelings, Giving Directions, and Student - Talk Response. No significant interaction was found between the two administrations and the ten behavioural categories. It was concluded that no significant change occurred in the proportion of classtime allotted to each of the ten behavioural categories during the student teaching period.

Weber (1968) conducted a four-year study to test the hypothesis that indirect teacher behaviours foster pupil more than do direct teacher behaviours. Multivariate composite scores derived from interaction analysis data were used to classify 180 elementary school students (who had the same teacher for grade 1 through 3, and a different teacher in grade 4) as having experienced one of four teaching behaviour combinations : indirect or direct all four years; indirect for three years and direct in the fourth year; and direct with indirect in the fourth year. Student responses to a creative thinking test composed within the framework of two forms of creative expression, verbal and figurative, were compared with their

teacher behaviour experience. He found that verbal creativity is fostered more under the influence of indirect teacher behaviours, and that figural creative potentialities are encouraged more under the influence of consistent patterns of teaching behaviours. It would seem then, that consistently growth of both verbal and figural creative expression.

Denny (1968), in an examination of classroom variables related to creativity, he isolated two distinct dimensions : one relating to the specific structuring behaviours of teachers, and the other to general aspects of classroom climate. Denny maintains that the variables associated with the general dimension are essential prerequisites for specific teaching behaviours to have a durable influence on pupils' creative growth. An examination of the features of the classroom climate that promote creative growth, will indicate some of the teacher behaviours that are of considerable importance in fostering creativity.

Teachers' classroom behaviour and approach to topics, their controlling strategies, openmindedness, authoritarianism and other characteristics, creativity levels were found to be related to initiative behaviour and creativity on the part of the students (James, 1964; Castelli, 1964; Wodtke and Wallen, 1975;

Yamamoto, 1967; Walker, 1967; Broome, 1967; Weber, 1967; Haddon and Lytton, 1968; Abraham, 1971; Moore, 1973; Baker, 1973). Johnson (1971) has found that student creativity outcomes in the classroom appeared to be associated with the particular antecedent - verbal alternatives enunciated by the teacher as follows : Teacher positive direction; Teacher broad questioning, Teacher uncertain information acts, and Teacher unclear material contextualization acts.

When the behaviour of a group of second-grade teachers was recorded using Flanders observation schedule, Puranjoti (1972) found that among other behaviours, the encouragement of self - initiated pupil talk, and the teacher's acceptance and use of students' ideas correlated positively with the measured creativity of students. These behaviours can be interpreted as indicating that students had an important role to - play in the direction and initiation of classroom activities.

Anderson (1972) reported that creative performance of pupils can be facilitated by the quality of the verbal classroom interaction. He further mentioned that "The classroom that exhibits flexibility in the use of pupil - initiated ideas, and the use of silence and seat - work will facilitate both academic and - creative performance."

Davidson (1968) found that feedback from the interaction enables the teachers to modify their influence such that the children's critical thinking is maximised while, at the same time, their 'non-productive' thinking is reduced. Le Roy (1973) has compared evidence of teachers' verbal behaviours with creative thinking ability of students. He mentioned that teachers receiving feedback information were able to effectively change their verbal behaviour patterns in four of five categories; however, this did not significantly change the creative thinking ability of their students.

Ishler (1973) has conducted a study on the classroom behaviour of high and low creative English and Social studies student teachers. He has concluded that the creative student teachers exhibited more use of certain verbal behaviours considered conducive to a creative climate than did the less creative student teacher, such as, using more indirect behaviour, and asking more divergent questions. The verbal behaviour of the creative student teacher encouraged more pupil talk. The creative student teachers exhibited more flexibility and originality through the use of a variety of interactional patterns. Chambers (1973) has compared facilitating and inhibiting teachers and found that facilitating teachers

encouraged students to be independent by serving as a model while inhibiting teachers discouraged students ideas, creativity, etc. and there were insecure.

Morris (1974) sought to identify classroom having nurturing conditions, record their characteristics, and determine the statistical relation between scores on the observation instruments and scores on tests of creativity given in those classrooms. The result indicated a generally positive statistical relation between observation scores and creativity test scores.

George (1976) has found that there was no significant relationship between Creative Teaching Process and indirect/direct behaviour of teachers. However, the high Creative Teaching Process group of teachers were indirect in their classroom behaviour as compared with the low Creative Teaching Process group of teachers. While the Darwin's likelihood ratio criterion test was employed; the composite matrices of the high and low Creative Teaching Process groups of teachers revealed significant difference between them. He further reported that there was significant negative relationship between Creative Teaching Process and Divergent Question Ratio. There was no significant relationship between Creative Teaching Process and the remaining dimensions of teacher behaviour

considered in his study. Although a number of studies of classroom behaviour have been conducted in which one of the dependent "product" variables has been pupil creativity gain, the relationships have been conflicting and indirect (Wodtke, 1963; Soar, 1966, 1968; Gallagher, 1965; Taba, 1964; Sears, 1963; Spaulding, 1963; Birkin, 1970). The studies quoted above are heterogeneous in sampling, cultural settings, tools, method and procedure. Therefore, it is difficult to have generalization. Studies employing the classroom behaviour as independent variable in the context of criterion variables of creativity by means of comparative study between India and Thailand may be extended to student teaching systems.

#### 1.7.0 Creativity and Sex

Bhavnani and Hutt (1972) childed research workers in the field of divergent thinking and "creativity" for their apparent neglect of the topic of sex differences. They claimed that there exists a general assumption, explicit or implicit, that sex differences in performance on divergent thinking tests do not exist. Studies which have looked at this question, whether as a primary or subsidiary aim, have produced a confusing pattern of results.

Reid, King and Wickle Wire (1959) conducted a

study and found that the lower class boys were more creative than the lower class girls. Das (1959) studied the students of higher forms, 4th, 5th and 6th of the four high schools in Madras City. He used Rorschach as a measure of imagination. He found that there was slight but not significant sex differences in imaginative content in the age range 13 to 16 years.

Yamamoto (1960) reported "there was a consistency tendency among the groups for girls to excel boys on creativity score through grades IV to VI even when mean I.Q.'s were almost equal (boys = 152, girls = 153.5). In another sample where boys had slightly higher I.Q.'s than girls, still girls show higher mean creativity scores than the boys. He further stated that this was not true for double talented group of high creativity.

Klausmeier (1962) found significant difference between boys and girls divergent thinking tests. Wallach and Kogan (1965), Ward (1968), and Hargreaves and Bolton (1972), were unable to find any statistically significant sex differences on measures of fluency or originality.

Several other researchers, however, have found the well - documented verbal superiority of girls

(Hutt, 1972) to be reflected in verbal fluency scores on divergent tests, although results from other measures of divergent thinking have shown little consistency.

Torrance and Aliotti (1969), Olive (1972), and Bhavnani and Hutt (1972), all found that girls obtained significantly higher scores than boys on a variety of measures of verbal fluency. Whereas Torrance and Aliotti found that boys scored significantly higher on corresponding measures of originality, however, Bhavnani and Hutt found no such difference.

Dutt (1967) established the relationship between creativity and sex by administering the verbal creativity test on one hundred boys and one hundred girls, at Banaras Hindu University. He found that the distribution of verbal creativity is almost mesokurtic for the entire population of boys but in the case of girls, it is leptokurtic, thereby decreasing the number of score in the vicinity of mean. He did not find the significant difference between the two sexes which implies that both sexes are equally creative. Raina (1969), moreover, working with 180 Indian children, found that boys excelled on all the figural measures of the Torrance Tests of Creative Thinking, as well as on some the verbal measures.

Joshi (1973) in his study by administering

verbal creativity test on school students established the result that "sex was hardly a significant factor on the whole though affecting at extra ordinary boys level."

Maccoby and Jacklin (1975), in their recent exhaustive review, concur with the conclusion that verbal superiority of girls, at least from the age of about 7 onwards, whereas non-verbal measures show no clear trends.

It is clear that some of these discrepancies must arise from differences between the studies in terms of sampling of subjects, nature of test used, condition of administration and so on.

A more fruitful approach to the problem of sex differences might be to extend the scope of enquiry beyond the straightforward "ability testing" analyses attempted so far, and to investigate styles, as well as levels, of test performance (Hargreaves, 1974b). It may well be that sex differences in the content of divergent test responses are more clear-cut than those in overall measures of ability. If sex-typed patterns of response content can be demonstrated empirically, two further questions arise : to what extent is each sex capable of adopting the opposite - sex style when instructed to, and how

might such a capability relate to divergent thinking ability ?

It is well known that variations in the test situation can exert a considerable influence on divergent thinking, Vernon (1971) has reviewed some of the empirical work in this area. Hudson (1968), for example, invited sixth-form schoolboys to complete the uses for objects test as themselves; as Robert Higgins, the conscientious, dedicated computer engineer; and as John Mc Mice, the uninhibited, bohemian artist. Although convergers were generally more fluent in the role of Higgins, and divergers in the role of Mc Mice, the most striking finding was that some convergers produced many more ingenious, witty, violent and obscene responses in the role of Mc Mice than in other two conditions. They adopted very much more fluent, uninhibited and imaginative response styles as a result of a relatively slight change of context. The implication is that cognitive styles, at least as measured by open-ended tests, are by no means fixed psychological characteristics : ones shall extend this line of investigation into the area of sex-typed cognitive style.

Heim (1970) has drawn attention to the suggestion that creative people generally tend towards

greater cross - sex identification than the average ...  
"that the creative man - in whatever field - tends to have more feminity in his psychological make-up than has the less creative man, and that the creative woman tends to possess more masculine traits than does the less creative woman" (P.139). This notion has received empirical support from the studies of Barron (1957) and Helson (1965), and was upheld by Biller et al (1969) in their study of 35 kindergarten-age boys. They distinguished between mixed and consistent sex-roles - patterns in terms of the discrepancy between sex-role orientation (assessed by draw-a-person procedures) and sex-role preference (assessed by toy and game selections). Boys with mixed sex-role patterns scored significantly higher on divergent tests than did those with consistent sex-role patterns. One might predict that creative subjects, at least as defined in terms of divergent thinking, are more likely to be able to adopt opposite-sex response styles than are less - creative subjects.

#### 1.8.0 Need of the Present Study

Culture determines the ways, beliefs and modes in a society and as such, it moulds the traits of an individual living in it. Every culture has some - attributes that are different from the others and these differences to some extent are exhibited in

creative thinking of people. Stein (1953) insisted that creativity must be defined in terms of culture in which it appears. He hypothesized that studies of creative person may reveal a sensitivity to the gaps that exist in his own culture that his creativity may be manifested in calling attention to these gaps.

According to Taylor and Holland (1964) they have mentioned that "creativity attributes may possible be modified in either positive or negative direction by environmental influences."

The investigator as a Thai student studying in Baroda City, India, has observed the main differences with regard to academic institutions between Baroda City (India) and Bangkok City (Thailand) were educational setting, working conditions, climate and training programme i.e. in general the method of teaching appears to be stimulating more in Thailand by means of audio-visual materials such as, slide, opaque projector, radio, etc. Moreover, the students are provided with more chances to carry out experiments in the school-lab. But the student participation in the classroom is more in India. The objective tests are used more in Thailand than in India. Finally, in India there is lack of sufficient provisions for extra curricular activities. If the -

differences in creative thinking exists it may be the results of differences in these environmental factors.

There are other studies aiming at comparing the creative thinking of samples across-cultures. These studies are conducted by Mead and Metranx (1953), Johnson (1963), Alex Osborn et al (1965), Torrance (1969) etc.

The studies related to correlates of creativity across the culture of Thailand and India are not available. Therefore, the present study was undertaken to find out whether the differences in environmental factors as socio-economic status, school climate and classroom behaviour affected the creative thinking. In other words, it is an effort to resolve the issue as whether the differences in creative thinking is a function of environmental and cultural factors.

#### 1.9.0 Statement of the Problem

##### 1.9.1 Title

The problem of this study reads as : A comparative study of creative thinking in relation to Socio-economic status, School climate and Classroom behaviour of high school students in Baroda City (India) and Bangkok City (Thailand). It was designed to compare

<sup>creative thinking of</sup>  
the Indian high school students and Thai high school students in relation to their socio-economic status, school climate and classroom behaviour.

In the present study, by creative thinking denotes the total scores as well as scores on each sub-tests of the Passi Tests of Creativity (Verbal Form) and the Torrance Tests of Creative Thinking (Figural Version Form A and Verbal Version Form B), Socio-economic Status by the Kuppaswamy's Socio-Economic Status Scale, school climate on the Organisational Climate Descriptive Questionnaire (Desai, D.M. and Samrong, 1975) and classroom behaviour as observed by the Flanders, Interaction Analysis Categories (A ten category system).

#### 1.9.2 Objectives

The following are the objectives of the present study :

(i) To compare creative thinking of Indian students (Baroda) and Thai students (Bangkok).

(ii) To study the relationship of creative thinking of high school students of Baroda City (India) and Bangkok City (Thailand) in accordance with their socio-economic status, school climate and classroom behaviour.

(iii) To study the interaction effect of country, socio-economic status, school climate and classroom behaviour upon ~~their~~ creative thinking.

(iv) To compare the factor structure of the space due to the variables relating to creative thinking of Indian (Baroda) and Thai (Bangkok) students.

### 1.9.3 Hypotheses

To achieve the objectives of the study mentioned above, the following null hypotheses were framed :

(i) There is no significant difference in the creative thinking of the high school students in Baroda City and Bangkok City.

(ii) There is no relationship between the socio-economic status and creative thinking of Indian students (Baroda) and Thai students (Bangkok).

(iii) There is no relationship between school climate and creative thinking of Indian students - (Baroda) and Thai students (Bangkok).

(iv) There is no relationship between classroom behaviour of teachers and creative thinking of Indian students (Baroda) and Thai students (Bangkok).

(v) There is no interaction effect due to -

country, socio-economic status and school climate of Indian students (Baroda) and Thai students (Bangkok) upon their creative thinking.

(vi) There is no interaction effect due to country, socio-economic status and classroom behaviour of Indian students (Baroda) and Thai students (Bangkok) upon their creative thinking.

(vii) There is no significant difference in the creative thinking of Indian students (Baroda) and Thai students (Bangkok) with respect to sex.

#### 1.9.4. Key Words

Before going for method and procedure of the problem, it will be helpful to define the different terms that are used in the present study.

(i) A comparative study is defined as "A Study which makes an important contribution to ones' understanding of educational and social phenomena, for it seeks to demonstrate whether findings concerning human behaviour are universally valid or are limited to one culture.

(ii) Creative Thinking : Passi (1971) has defined creativity as a multi-dimensional (Verbal and non-verbal) attribute differentially distributed among people and includes chiefly the factor of Seeing -

problems, fluency, flexibility, originality, inquisitiveness and persistency. It may be pointed out at this stage that creative thinking is accepted to manipulate the environment with a view to create new ideas and establish novel patterns and relationship. The investigator accepts this definition and that of Torrance (1954) as the bases of the present study. Torrance has defined creative thinking as a process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies; testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.

(iii) Socio-Economic Status is defined as social prestige by means of education, occupation and income and is measured through the Kuppaswamy's Socio-Economic Status Scale (Form B).

(iv) School climate is defined as a total "feel" and atmosphere of the school and the various conditions under which the teachers work and is measured through the Organizational Climate Descriptive Questionnaire (Desai, D.M. and Samrong, 1975).

(v) Classroom Behaviour : Flanders (1970) defines teacher behaviour as "those acts of the teacher which occur in the context of classroom interaction." The present study conforms to this concept as indicated by classroom behaviour.

#### 1.9.5 Delimitation

The sample number was limited to 300 students of grade IX in Baroda City and 300 students of grade IX in Bangkok City. The six English medium schools selected for the study in Baroda were situated in urban area and the same in the case of six secondary schools in Bangkok. Only three independent variables of socio-economic status of students, school climate and classroom behaviour of teachers were undertaken to study in the context of criterion variable of creative thinking. Factors of personality, attitudes, intelligence, values etc. are not included in the present study. They are outside the means of an individual investigator. The further delimitations with regard to sampling technique, tools used and the analysis of data are given in Chapter II (Method and Procedure).

#### 1.10.0 Plan of Reporting

The reporting of the present study will be

made as per the following :

- Chapter I : Introduction.
- Chapter II : Method and Procedure.
- Chapter III : Description of Data.
- Chapter IV : The Analysis of Variance (ANOVA) Approach.
- Chapter V : Significance of the Differences between Means (The t-test Approach).
- Chapter VI : The Correlational and Factor Analysis Approach.
- Chapter VII : Summary, Conclusions, Implications, and Suggestions.
- Bibliography.
- Appendices.