CHAPTER – II

REVIEW OF RELATED LITERATURE

Review of the related literature allows the researcher to acquaint himself with the current knowledge in the field or area in which he is going to conduct his research. Besides serving the above purpose it helps the researcher-

- To delimit and define the limits of his study.
- To avoid un-intentional duplication of well established findings and
- To know the recommendations of previous researchers for further research which they have listed.

Creativity is relatively a new field of research and had not yet been investigated as much as other fields. Some of the authors have reviewed research in creativity. Some of these reviews have classified the research studies under different headings like, nature of creative thinking, personal disposition related to creativity, external determiners and applications, particularly in connection with education and training, techniques and programmes of developing creative thinking, studies at institutional level, transcendental meditation (T.M), theoretical/philosophical; identification and measurement of creativity; intelligence, achievement and creativity, socio-cultural factors; nurturing of creativity; surveys and compilations; text books; trends in programmes alternatives; instructional materials and strategies developing creativity and other tool skills; and trends of the decade.
2.1 STUDIES UNDERTAKEN ABROAD:

Andrew, E. G. (1930) studied on the topic “sex differences in creativity”, the main objective of his study was to find out the sex differences in creativity. He observed clear cut sex differences in American student populations and reported that girls reached the high point of their imagination one year earlier than boys.

Maslow, A. H. (1954) studied about creativity of self-actualized person. The main objective of his investigation was to study the characteristics of self-actualized person. He presents a list of 15 characteristics of self-actualized person of which creativeness is one. He explained that, a person having special kind of creativeness or originality or inventiveness that has, certain peculiar characteristics, he also (1958) classified the creativity as primary and secondary creativeness.

Getzels, J. W. and Jackson, P. W. (1962) an early work on creativity test, showed that groups of bright adolescents could be found who scored relatively high on IQ tests and relatively low on tests such as Guilfords uses of a brick, or vice-versa. The two groups did not differ in scholastic achievement. However, not only did Getzels and Jackson fail to validate their ‘creativity test’, they also failed to show that either IQ or creativity predicted scholastic achievement, because they did not check the later performance of individuals who scored high or low on both tests, in particular the Torrance Test of Creative thinking (1966) has shown that tests can be produced that correlate moderately with later measures of creative achievement, with some correlations in the range 0.4 to 0.6 (Torrance,1988)
**Torrence, E. P. (1962)** conducted a study on the topic, “Developing creative thinking through school experiences.” He reviewing a number of earlier studies on the growth of creativity and giving results from many studies conducted by himself at Minnesota. In his study used the brainstorming approach with pupils in the primary grades. He has described the developmental trends of boys and girls in creative thinking abilities. He also observed that from eight to twelve years the child continues to develop his/her imagination and can use his/her skills creatively in many areas. After twelve years of age to fourteen, the spirit of adventure reigns supreme in both social and emotional fields. The skills involved in creative problem solving are slowly learnt during this period, though adventure still occupies an important part in life. However, peer acceptance and the unstable nature of interest and aptitudes may dampen the creativity of sixteen year old boys and girls. At sixteen to eighteen years youth is full of optimistic aspirations and considers arts and social activity as a means of enriching living. The individual develops the ability to channel his emotional energy, creatively and to solve problems of a complex nature.

**Wodtke, K.H. (1963)** in United States used a creativity test to examine residual gains of pupils over one school year in classes of highly controlling as compared to low controlling teachers. The results reveal that the pupils of low controlling teachers achieved higher gains of verbal creativity, verbal fluency and flexibility and the pupils of high controlling teachers achieved higher gains on non-verbal elaboration. Wodtke’s experimental studied concluded that the pupils of highly controlling teachers exhibit less self-initiated verbal behaviour, and achieve lower gains on measures of verbal creativity than those of more permissive teachers. In particular, it has been argued by Torrance (1962) that directive teaching practices, and that such environments may in fact suppress the development the development of creative
abilities. According to this point of view, the classroom behavior of highly creative students may conflict with the practices of highly directive teachers.

**Torrance, E. P. (1964)** in the measurement of creative thinking at High school level commented that of the different educational levels, the high school years have been the most neglected in creativity research. Information has accumulated concerning the pre-school and elementary school years because of interest in the “creative imagination”. But educators appear to have had much less interest in the creative imagination of high school students. Information has also accumulated concerning creativity during the college years, because many outstanding creative scientists, writers and performers of many kinds began their productivity during these years and because it has been deemed appropriate for colleges to produce professionally trained people who make creative contributions. No such expectations exist for high schools. Torrance, E.P. (1965) also used his Ideal Pupil checklist to explore the attitude of over a thousand teachers from the United States, Germany, India, Greece and the Philippines. He concluded that teachers in all five cultures valued the creative child insufficiently. They may be unduly rewarding courtesy, doing work on time, obedience, popularity and willingness to accept the judgment of authorities.

**Smith, R.M. (1965)** conducted a study on the topic, “The relationship of creativity to social class.” The main objective of the investigation was to study the influence of socio-economic status on verbal and non-verbal creativity of fifth grade white children. He studied on verbal and non-verbal creativity of fifth grade white children in Pittsburg. He found that among fifth grade white children in Pittsburg, the middle class performed significantly better on verbal tasks, but the lower class excelled on
non-verbal items. There is a relation between socio-economic status and verbal and non-verbal creativity.

**Williams, F.E. (1966)** administered a questionnaire to more than five hundred teachers across the United States just beginning training. He reported that these teachers did not understand what was meant by the term ‘creativity’ and that they had difficulty in identifying creative talent in pupils. This study was replicated by Eberle (1966) and reported the same results. Abraham (1966) also reported that many teachers do not understand and are not prepared to cope with scholarly discussion of convergent and divergent thinking and complex concepts of pupils’ intellectual abilities.

**Weisberg, P.S. and Springer, K. (1967)** conducted a study on the topic, “Environmental factors in creative function.” The main objective of the study was to assess the home influence on creativity. They reported that home influence is a significant factor in encouraging the development of creative thinking. Home is the centre of learning and family is the contributing agent to child’s creativity. Suitable parental care and encouragement of the children will definitely enhance creativity.

**Straws, J.H. and Straws, M.A. (1968)** conducted a study on the topic, “Family roles and sex differences in creativity in Bombay and Minneapolis.” In this wider cross-culture study they observed clear cut sex differences in American and Indian student population. In both societies, boys were significantly more creative than girls. They further established that the gaps were wider in Indians than Americans. This was attributed to the degree of cultural and social uplift of females in American society. Mar’ I (1971) found that Arab male rural subjects of viii grade scored significantly
higher than females in nine scores out of thirteen drawn from the battery of Torrance of creative thinking.

**Haddon, F.A. and Lytton, H. (1968)** studied about Teaching approach and the development of divergent thinking abilities in primary schools. The main objective of the study was to find out the effect of different kinds of schooling on creativity. They found that traditional schools emphasized convergent thinking and authoritarian learning while in informal or progressive or open schools the emphasis was one self-initiated learning and creative abilities.

**Treffinger, D.J. Ripple, R.E. and Dacey, J.S. (1968)** studied teachers’ attitudes about creativity. The main objective of the study was to assess the teachers’ attitudes towards creativity. They used 14-items survey instrument, which was administered to teachers and administrators (N=250) from public and parochial schools of New York city. They conducted an in-service program (for four days) on creativity as a treatment in their pre and post-test design. The results reveal that in-service education programs in creative problem solving made a valuable contribution to the professional development of participants; facilitated teachers’ ability to identify creative pupils; and increased understanding and more favorable attitudes about creative problem-solving abilities.

**Ogletree, E.J. (1968)** conducted a study on the topic, “A cross cultural exploratory study of the creativeness of steiner and state school pupils in England, Scotland, and Germany.” He conducted this study on a large sample of 1165 sixth grade girls and boys from England, Scotland and Germany. He found that English and German girls were significantly higher on both verbal and non-verbal creativity, but in Scotland
girls were not significantly higher than boys, though their mean on figural creativity score was higher.

**Ben-Zeev, S. (1972)** studied about the influence of bilingualism on cognitive development and cognitive strategy. The main objective of the investigation was to study the influence of bilingualism on creativity. He found that children, relative to monolingual controls, show definite advantages on measures of “cognitive flexibility,” “creativity” or “divergent thought”.

**Ogletre, E.J. and Ujdaki, W. (1973)** conducted a study on socio economic status and creativity. The main objectives of the study were to find out the relationship between social class and creativity and the impact of socio-economic status on creativity of individuals. They reported a positive correlation between social class status and creativity. The creativity scores of the upper class were significantly higher than those of the middle and lower class samples.

**A study in Great Britain (Mc Even, Gipps and Summer, (1975)** revealed that children’s progress in learning English does not depend on their formal English teaching alone. There are other factors: (1) language spoken at home, (2) Pre-school experience/English spoken at school and (3) Social class. This study showed that Asian children who speak some English at home have a distinct advantage in terms of using the language over those who never or rarely do so. But the degree of proficiency that can be acquired in learning a language at school depends not only in the number of years during which it is learnt but also on the motivation of the student’s, the stage at which it is studied.
Bjerstedt, A. (1976) survey research project studied creativity in schools, one of the aims being a survey of the opinions of teachers on how to promote creativity in schools. The project included an unstructured survey of the views of about 300 people, a structured survey of the opinions of 350 people and classroom observations. One of the main findings was that it is possible to stimulate aspects of creativity by fairly simple means, using specific types of study materials. Bjerstedt and his colleagues found that the teachers tended to define creative ability in terms of “independent work”, “richness of ideas”, “originality” and “the ability to combine”.

Westra, D. (1978) studied on sex differences in creativity. The objective of the research was to study the gender differences in divergent thinking. He reported that the adolescent sex differences in divergent thinking which are consistent with a general position regarding the tendency for females to perform better than males on verbal tasks.

Jaquish, G.A. and Ripple, R.E. (1980) conducted a study about sex differences in creativity. The main objective of the study was to find out the gender differences in creativity. They reported that the adolescent sex differences in divergent thinking which are consistent with a general position regarding the tendency for females to perform better than males on verbal tasks.

Torrance, E.P. (1980) studied on sex differences in verbal creativity. The main objective of the study was to find out the sex differences regarding verbal creativity. And he found that sex is related to the Pre-school children. He also reported adolescent sex differences in divergent thinking which are consistent with a general position regarding the tendency for females to perform better than males on verbal tasks.
Tan-Willman, C. (1981) studied about Canadian student teachers’ attitudes about creativity. An attempt has been made to determine the attitudes of Canadian student teachers (33 male and 101 female) to creativity. The same 14-items instrument of Treffinger, Ripple and Dacey (1968) was used, but only 11 items were presented to the respondents to indicate their agreement on a 5-point Likert-type Scale. The results reflect more favorable than unfavorable attitudes toward creativity. Although the respondents agreed to the need for teaching creative thinking and to the notions that many of us possess creativity and that pupils’ ability to think creatively and to solve problems can improve through direct instruction, they are not quite decided whether creative people are born, not made, and whether it is wise or necessary to teach children to become more creative.

Weisberg, R. (1986) studied about creativity: Genius and other myths. He observed that creative solutions develop as problem solvers acquire information indicating that their initial solutions were inadequate. In attempting to overcome these inadequacies, individuals try things they have not tried before. Further, he points out that the initial attempt to solve a problem knows about the problem when he/she starts working. Changes in the way the problem approaches the problem i.e. “restructuring” occur in response to information that becomes available as the person works on the problem. That is, restructuring are not intuitive leaps into the unknown, but responses to changes in the problem. Finally, novel solutions to problem also arise in response to information that becomes available as the person works on the problem.

Fryer, M. (1989) in the most comprehensive British study, the teachers were asked to tick every item listed in a given table which matched their view of creativity. Results indicate that the most teachers see creativity mainly in terms of Imagination (88.7%).
originality (80%) and self-expression (73.7%). Only half the sample regards divergence (50.8%) as synonymous with creativity. Furthermore, the convergent process involved in creative thinking is not much acknowledged. Only 10.2% think that convergence accords with their view of creativity. The study revealed that the factors most assisting the development of creativity in the teachers’ view were building pupil’s confidence, encouraging pupils to ask questions, a creative teacher and some free choice at home. The major obstacles perceived by the teachers were inadequate resources, inadequate preparation time, over-large classes, excessive teaching and non-teaching workloads, and unsuitable accommodation.

**Boden, M. A. (1990)** studied about the creative Mind: Myths and Mechanisms. He distinguished two sense of creativity. One is psychological creativity and the other is historical creativity. A valuable idea is P-creative if the person in whose mind it arises could not have had it before; it does not matter how many times other people have already had the same idea. By contrast, a valuable idea is H-creative if it is P-creative and no one else, in all human history, has ever had it before.

**De Bono, E. (1992)** studied about serious creativity and he observed that, creativity has a very wide and confused meaning. There are elements to ‘newness’ and of ‘bringing something into being’ and even elements of ‘value’. There may be several different processes involved in the wide definition of creativity; the term “lateral thinking” is, however, very precise. Lateral thinking is concerned with the changing concepts and new ideas.

**Hill, R. (1992)** Prepared paper for leadership accessing symposium about finding creativity for children. He examined the environmental barriers to creative expression. These include lack of freedom, inappropriate reward systems, and insufficient
resources and time. Environment stimulants to creative expression include freedom, sufficient resources and time, enthusiastic management, a non-threatening and collaborative atmosphere, recognition and reward, and challenge. The challenge cannot be met by curriculum reform alone. Sound innovation requires a facilitative climate in which both young people and teachers can enjoy “freedom to learn” and realize their creative potential.

**Thomas, E. (1994)** studied about the practices of schools to develop creativity among students and suggested that, “the school curriculum has a central place in the process of schooling. It is necessary to emphasis that a school curriculum is not just a syllabus were the contents are fitted into a timetable for the purpose of taking and learning. The school is for the purpose of teaching and learning. The school curriculum should be seen as a series of planned activities, which result in learning, and in which the teacher plays a crucial role. The learning activities take place mainly in school but can often extended to home community.

**A study in the UK, Fryer, M. (1996)** used a sample of 1028 teachers drawn from 57 schools (school teacher N=792, male=229, female=563 and 24 incomplete), and colleges (education lectures N=207, male=87, female=120) in the United Kingdom. The study was designed to provide a comprehensive map of teacher’s views on creativity, together with a more detailed investigation of the views of a representative sub-sample. Following unstructured exploratory interviews and pilot work, a teacher’s questionnaire was devised which every respondent completed. The teachers were asked to identify the five characteristics that they most valued and the five they least valued. The five most highly related characteristics were consideration for others being socially well adjusted, self-confidence, independent in thinking and curiosity.
The British teacher seemed more willing to encourage creativity than those involved in earlier studies.

**UNESCO (1998)** the survey results of the World Education Report pointed out that, “If education is to be expected to help the poor to lift themselves out of poverty, then in the poorest countries education itself needs first to be lifted out of poverty.” From this perspective, structural adjustment programs designed to eliminate wastage in public service could usefully be complemented by investment in the physical infrastructure of education: providing schools with water and electricity and reasonably solid walls and roofs, plus furniture and of course text books and other teaching materials.

Teachers play a vital role in the progress of developing creativity among students. Beetlestone (1988) argues that there are two types of teachers. The first type of teachers sees creativity as a rare and original gift which few children possess. They look expectantly for the spark of creative geniuses, but they are ever hopeful for the pupils. The second type of teachers sees creativity all around them in everyday activity. We can see both types of teachers in the society. About fifty percent of the teachers disagreed with the possibility of developing creative thinking in all children. The remainder agreed that creativity could be developed in all the children, but certain condition had to be fulfilled. They believed that it depended on many factors: the school environment, living conditions, teacher’s encouragement and co-operation of parents.

**Michael Mumford (2003)** in a summary of scientific research into creativity suggested that, “Over the course of the last decade, however, we seem to have reached a general agreement that creativity involves the production of novel, useful
products.” Creativity can also be defined “as the process of producing something that is both original and worthwhile. What is produced can come in many forms and is not specifically singled out in a subject or areas.” Authors have diverged dramatically in their precise definitions beyond these general commonalities.

**World conference (2006)** on Art Education which was held in Lisbon Portugal, a document on Building Creative capacities for the 21st century was produced on March 2006. It was based on conclusions obtained from Preparatory work which carried out in the different geo-cultural regions in relation to arts education and creativity.

**In the session (2007-08),** the House of commons put forwarded their first special Report on “Creative Partnership and Curriculum” in which the Government attached great importance to creativity as a means of supporting children and young people’s development and achievement.

**On 1st November, (2009)** Carlin Flora published the concept on everyday creativity that we all marvel at other people’s artistic achievement and ingenuity. But most of us fail to nurture our inner innovator. We should start living creativity and reap the benefits- including fewer relationships headaches and more fulfilling workdays. It was last reviewed on **August 27, 2012.**

**2. 2. STUDIES IN INDIA:**

**Phathak, P. (1962)** conducted an experimental study of creativity and intelligence and school achievements. The objective of his study was to find out the correlation between creativity and intelligence and its effect on academic achievement. He reported that the highly creative need not be necessarily highly intelligent. The correlation between creativity and intelligence in the study ranged from 0.1 to 0.44
with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%. Further, while partialling out the effect of academic achievement, no significant relationship was found between intelligence and creativity.

**Prakash, A.O. (1966)** conducted a study on the creative thinking abilities of Indian children. One of the objectives of his study was to find out the gender differences on creativity. He reported that boys were superior to girls in all respect of verbal creativity. Boys performed better than girls on the originality dimension. In fluency also boys have been reported as superior.

**Raina, M.K. (1968)** conducted a study about the relationship between creativity and intelligence and has found that the highly creative need not be necessarily highly intelligent. The co-relationship between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables in nearly 9%. Further, while partiailling out the effect of academic achievement, no significant relationship was found between intelligence and creativity.

**Raina, M.K. (1969)** studied on the topic, “A study of sex differences in creativity in India”. The objectives of his investigation were to study the gender differences in creativity and to find out the relationship between creativity and socio-economic status and parental education. He found that boys were superior to girls on all respects of verbal creativity. Boys performed better than girls on the originality dimension. In fluency also boys have been reported as superior. He found that in non-verbal creative thinking boy’s score have been shown to be significantly high than girls. He also observed that, there is a relationship between socio-economic status, parental
education, and creativity. He reported that a higher creative group comes from parents who were comparatively better educated than the parents of lower creative students.

**Chatterjee, B.B. (1970)** in his Explanation of some structural components of creativity through Projective tests, opined that democratic school administration fostered creativity and initiative in teachers and broadened understanding on the part of all concerned. One of the objectives of his study was to find out the effect of different kinds of schooling on creativity of the children. He found that the students of well-equipped and advantaged schools did better on creativity tests than students of ill-equipped schools. He said that, the type of school is a significant factor in developing creativity.

**Sharma, K.N. (1971)** studied on the topic, “creativity as a function of intelligence, interest and culture”. The main objective of his investigation was to study about the relationship between creativity and intelligence. He reported that the highly creative need not be necessarily highly intelligent. The co-relationship between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables in nearly 9%.

**Passi, B.K. (1972)** conducted a study on the topic, “An exploratory study of creativity and its relationship with intelligence and achievement in school subjects at higher secondary stage”. The main objective of his study was to find out the relationship between creativity and intelligence and he observed that the highly creative need not be necessarily highly intelligent. The co-relationship between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables in nearly 9%.
Sharma, K.P. (1974) conducted a study of creativity and its relationship with intelligence and locality. The objectives of his investigation were-

1) To study the relationship between creativity and intelligence.

2) To study the difference between rural and urban school student’s creativity.

He found that the highly creative need not be necessarily highly intelligent. The co-relationship between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables in nearly 9%. He also reported that the rural students were more creative than the urban students.

Gakhar, S. (1974) conducted a study about Creativity in relation to Age and Sex. He tried to explore developmental trends by using creative measures and revealed that (i) the fluency and flexibility scores of the students showed an upward trend from IX to X grade which was followed by a decline from X to XI grade. (ii) The intersection effects of grades and sex were not found effective in accounting for the significant variances with regard to fluency, flexibility, originality, and total creativity of the students. (iii) The girls inhibited a significant increase in creativity from classes IX to X, followed by a significant decrease from classes Z to XI. But Gupta’s (1979) results revealed no significant difference in the creativity score of male and female students (N=496) of classes IX, X, XI and XII.

Vohra, I.N. (1975) conducted a study of non verbal creativity in relation to socio economic status, age, sex, medium of instruction and personality characteristics amongst the pupils of English and Gujrati medium. The objective of his study was to find out the gender differences in relation to non-verbal creative thinking of boys and
girls. He reported that no sex differences have been found in flexibility of non-verbal creativity.

**Saini, B.S. (1976)** studied creativity in relation to intelligence. The main objective of his study was to find out the relationship between creativity and intelligence. He has reported a positive and significant relationship between intelligence and creativity. He said that the highly creative need not be necessarily highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

**Rawat, M.S. and Agarwal, K.P. (1977)** conducted a study on the topic- A study of creative thinking with reference to intelligence, age, sex, communities and income groups. The main objectives of this study were-

1) To study the relationship between creativity and intelligence.
2) To study creativity and its relationship with sex.
3) To study the creativity and its relationship with Age.

They reported that the two variables (creativity and intelligence) under discussion were not significantly related. They also showed that boys were superior to girls on all aspects of verbal creativity. Boys performed better than girls on the originality dimension. In fluency also boys have been reported as superior. Another study by Rawat and Garge reported that girls are more creative than boys in all dimension of verbal creative thinking.

**Srivastava, R. and Sing, C. (1977)** conducted a study on creativity as a function of birth-order, socio-economic status and personality types. The main objectives of the study were-
1) To study the relationship between socio-economic status, parental education and creativity.

2) To study the relationship between creativity and locality.

They observed that the children of highly educated parents scored significantly higher than the children of less educated parents. They also found that the urban students were more creative than their rural counterparts.

Sehgal, K. (1978) studied about school systems as related to creativity of students. The objectives of the study were-

1) To make a comparative study of Government, model and private schools in relation with creativity.

2) To study the relationship between creativity and locality.

He found that the students of model schools were more creative than those of government and private schools. He explored the differences on creativity among the rural and urban students, and concluded that there existed no significant differences in creativity among the students belonging to rural and urban areas.

Gupta, A.K. (1978) conducted a study on the topic, “A study of Pupil’s creativity in two institutional settings.” The objective of his study was to compare the effect of Government and Private schooling on creativity of students. In his study in four higher secondary schools (Government and Private) revealed that the students of private schools scored significantly higher than the students of government schools in different dimensions of verbal and non-verbal creativity. All dimensions of creativity were significantly higher for the male and female students of private schools than the male and female students of government schools.
Sing, R.J. (1978) conducted a study in India on the relationship between creativity and intelligence. He reported that the highly creative need not be necessarily highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

Gulati, S. (1979) studied about creativity as a function of intelligence, Artistic Aptitude and Neuroticism. The objective of the study was to find out the relationship between creativity and intelligence. He reported that the highly creative need not be necessarily highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

Awasthy, M. (1979) conducted a study on the topic, “A study of creativity, intelligence, scholastic achievement and the factors of socio-economic status.” One of the main objectives of the study was to find out the relationship between socio-economic status and creativity. He reported that students of very high socio-economic status were superior to the students of high, average and low strata socio-economic status in flexibility, originality and total creativity, while students of high socio-economic status were superior to the students of very high, average, and low strata socio-economic status in fluency.

Muddhu, V. (1980) conducted a study on the topic, “A study of some personality correlates of intelligence and creative abilities among High school students in Andhra Pradesh. The objective of the study was to find out the relationship between creativity and intelligence. He found a negative co-relation between creativity and intelligence.
for the students coming from the urban locality while it was positive in the case of students coming from the rural locality.

**Sultana Ahmed (1980)** studied about the effect of socio-cultural disadvantages on creative thinking. The objective of her study was to find out the effect of socio-cultural disadvantages on creative thinking. She studied different types of schools, viz, extremely advantaged schools, slightly disadvantaged schools and extremely disadvantaged schools. It was found that pupils in the extremely advantaged schools scored high on creativity than the pupils in slightly disadvantaged and extremely disadvantaged schools.

**Jarial, G.S. (1980)** studied about verbal creative thinking among the students with different socio-economic status backgrounds and birth orders. The main objective of the investigation was to study the effect of socio-economic status on creativity. He reported that students of very high socio-economic status were superior to the students of high, average and low strata socio-economic status in flexibility, originality and total creativity, while students of high socio-economic status were superior to the students of very high, average, and low strata socio-economic status in fluency.

**Sharma, A.K. (1980)** studied about the creativity and it’s components as affected by socio-economic status and personality. One of the main objectives of his study was to study the relationship between socio-economic status and creativity. He reported that students of high socio-economic status scored significantly higher than the students of low socio-economic status, in fluency, whereas no significant differences was found in flexibility, originality and total creativity scores of these groups.
**Gupta A.K. (1980)** A factorial study of verbal and non-verbal creativity, intelligence, and socio-economic status. The main objectives of the study were:

1) To study the relationship between intelligence and creativity.

2) To find out the relationship between socio-economic status and creativity.

He found that the highly creative need not be necessarily highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%. He also reported that in India there is no significant difference in the creativity scores of high, middle and low socio-economic status students.

**Sen, A.K. (1981)** studied about creativity and its relationship with intelligence and socio-economic status. The objectives of the study were:

1) To study the relationship between creativity and intelligence.

2) To study the creativity and its relation with socio-economic status.

He reported that the highly creative need not be necessarily highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%. And he also found that there is no significant difference in the creativity scores of high, middle and low socio-economic status students.

**Raina, M.K. and Raina, V.K. (1981)** studied on the topic, “Teacher-educator competency in creativity.” They studied 45 teacher educator’s knowledge of research findings and materials on creativity. They used the ‘Information awareness checklist’ which was developed by Williams (1966). The study revealed that they were most aware of the need of creativity for their classroom teaching to have innovations, and
had a desire to have their pupils to think divergently and expect pupils to be creative at the same time as learning subject-matter content. The results also revealed that by and large the teacher educator’s did not possess sufficient knowledge or were not sufficiently aware of the creativity and creativity movement in the field of education and psychology.

**Dharmangadan, B. (1981)** studied creativity in relation to sex, age, and locale. The main objective of the study was to study the sex differences in verbal and non-verbal creative thinking. He showed that boys were superior to girls on all aspects of verbal creativity. Boys performed better than girls on the originality dimension. In fluency also boys have been reported as superior. In a study of non-verbal creative thinking boys scores have been shown to be significantly higher than girls.

**Sing, O.P. (1982)** studied on the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

**Sharma, K. (1982)** conducted a study on the topic, “A study of creativity with certain background psychological and organizational factors among students of higher secondary schools of Delhi. The objective of the study was to explore the relationship of creativity with certain background, psychological and organizational factors of students of government, private, aided public and central schools. The study concluded that creativity was significantly related to organizational variables like the management of schools.
Shukla Prakash Chandra, (1982) studied about the creativity in relation to sex, locality, and school subjects. The main objective of the study was to find out gender differences in creativity. He reported that boys were superior to girls on all aspects of verbal creativity. Boys performed better than girls on the originality dimension. In fluency also boys have been reported as superior.

Chaudhary, G.G. (1983) studied in India about the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

Dey, B. (1984) conducted a study on the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

Ramakrishna, A. (1986) also conducted a study on the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The co-relation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

Sharan, P. (1986) conducted a study on the topic, “A study of familial and personality under currents of creativity.” The main objective of the investigation was to study the creativity in relation with the socio-economic status and high status
occupation. He has shown that socio-status economic statuses is a mental construct, a degree of esteem or lack of esteem which people in a society display towards on individual. High socio-economic status, therefore, indicated a high income, high status occupation and adequate living conditions, whereas, low socio-economic status refer to poor income, low occupation and inadequate to living conditions. High socio-economic status is considered to provide a healthy and enriched stimulating environment in which personality may develop appropriately, whereas children of low self-income groups may develop feelings of insecurity and inferiority and an unhealthy attitude towards people and objects.

Dwivedi, S.K. and Sharma, B.M. (1987), conducted a study on the topic, “An investigation into the factors: Affecting creative Amongst the High school boys.” They conducted the study on 40 IX class students studying in Government High school, Bikaner in Rajasthan (India). The main objective of the study was to investigate those factors which inhibit or enhance the level of creativity amongst high school boys. Three groups of factors were considered. It was concluded that the orthodox nature of the family, its economic background, family disputes, an inability to converse fluently due to language difficulty, a lack of adequate teaching aids, a lack of opportunities to do creative work and a lack of new knowledge in the classroom were some of the important factors which affected creative thinking amongst high school boys.

Trimurthy, S.P (1987) studied about the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The correlation between creativity and intelligence in the study ranged from 0.10 to 0.44 with
a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

**Gupta, K.K. (1988)** studied about creativity, Intelligence and Achievement. The objectives of the study were-

1) To study the creativity in relation to intelligence.

2) To study the creativity in relation to locality.

He reported that the highly creative need not be highly intelligent. The correlation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%. He also found that rural students were more creative than the urban students.

**Singh, R.P. and Das, M. (1989)** studied on the topic, “Attitudes of teachers towards creative learning and teaching in Agra city.” He attempted to assess the attitude of teachers of 60 pre-higher secondary i.e. primary and junior high school teachers, 60 higher secondary teachers and 60 post-higher secondary teachers i.e. first degree and post graduate teachers towards creative learning and teaching. The purposive sampling technique was used to select a sample. The revised 50 items scale entitled “opinions on creative learning and teaching” developed by Torrance and Phillips (1972) was used to assess the attitude of the teachers, irrespective of their age, sex, teaching experience etc, two junior high schools, four higher secondary schools and two post graduate colleges of Agra city.

**Sarsani, M.R. (1989)** studied about the type of school (Private and Government) as one of the variables. The main objective of his study was to find out the effect of different kinds of schooling on creative development of the children. He found that
the students from Private schools were superior in all aspects of creativity over Government school students. Boys and girls scores from both types of schools significantly differed.

**Sahoo, P.N. (1990)** conducted a study on the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The correlation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

**Pal, Y. (1991)** conducted a study on the relationship between intelligence and creativity. He reported that the highly creative need not be highly intelligent. The correlation between creativity and intelligence in the study ranged from 0.10 to 0.44 with a median around 0.30. Thus, the median common variance shared by these two variables is nearly 9%.

**Agarwal, K.P. (1992)** conducted a study about the development of creativity in Indian schools. The objective of his study was to find out the effect of different kinds of schooling on creativity of students. He compared four types of schools and concluded that Kendriya vidyalayas (managed by central Government) were most creative; next in order were the students of Public, Government (managed by State Government) and Aided schools (grant maintained). The type of educational administration in a school is a significant factor in the development of creativity. The efforts of Kendriya vidyalayas get due rewards in the form of the growth of creative potential of their students. He found that the students of well-equipped and the advantaged school did better on creativity tests than students of ill-equipped schools.
The school’s category was defined in relation to the adequacy of buildings, library, furniture, teacher-pupil ratio, sports facilities etc.

Sudhir Kumar, M.A. (1992) conducted a study on socio-educational correlates of creativity among secondary school students in Arunachal. The main objective of the study was to find out the relationship between socio-economic status and creativity. He reported that father’s education and mother’s education were found to foster higher creative thinking ability, the students with well educated parents attained higher creativity scores than those with illiterate parents. Parental occupation was not found to be a factor related to the creativity of children.

Sharma, D. (1994) conducted an experimental study by organizing activities like brainstorming, problem-solving, quiz and project work in a science-teaching class. The main objective of the study was to assess the effect of special climate on creative thinking of children in particular through enrichment activities running across a wide range of school subjects. She found that after the investigation, the students of the experimental group showed significant gains with respect to verbal fluency, verbal flexibility, verbal originality and non-verbal creative thinking. In what ways can these activities be grouped together so as to get the maximum advantage in the classroom? How can interdisciplinary activities be organized amongst the students so that their knowledge of the sciences be linked to social sciences and languages and vice versa? All such questions need to be answered empirically by teacher educators.

Sudhir, K. and Khiangte, B. (1997) studied on creativity with personality variables, such as, adjustment, self-confidence, locus of control, security-insecurity, and fatalism. The main objective of the study was to find out the relation between creativity and personality variables. They noted that high creative girls from urban
areas turned out to be more intelligent, emotionally stable, conscientious and apprehensive than the high creative girls from rural background. The rural high creative boys were outgoing, conscientious tender minded and self sufficient as against their reserved, group dependent and expedient urban counterparts.

**Sarsani, M.R. (2006)** conducted a study on the topic, “Exploring the promotion of creative thinking among secondary school students in India.” One of the main objectives of his study was to assess the effect of schooling on the development creativity of students. He found that the students of well-equipped and advantaged school did better on creativity tests than students of ill-equipped schools. The school’s category was defined in relation to the adequacy of building, library, furniture, teacher-pupil ratio, sports facilities, etc.

### 2.3 STUDIES IN ASSAM:

**Bora, Krishna Prashad. (1969)** studied about the construction and standardization of a verbal group test of intelligence in Assamese for senior High School students and said that no content can be called finite for the construction of an intelligence test although inspection of available materials on testing may be definitely helpful for the preliminary work of construction. In the second section, the factorial validity of the test is established by computing the g-saturation values and centroid factor loadings. In the final the test is correlated with examination marks and dependable validity coefficients are reported. The test also correlates well with comparable English test.

**Das, Monoranjan (1976)** studied about the importance of practical education laid on the new educational system of Assam. He said that, a man is generally called as the manifestation of the body, mind and spirit. All round development of these
constituents makes a perfect man. Practical education can develop student’s physical, mental and spiritual potentialities.

Das, Manjula (1981) studied about play and its educational significance and opined that play is essential for the intellectual growth of children. It is natural for children to play, and in the early years the instinctive powers find their chief means of impression through play. The infant needs adequate physical exercise for the development of its organs and their co-ordination. It is through play ways that the child takes active interest in learning and he gained knowledge without any hesitation. Through play the child comes into relationship with his physical environment and his social environment. Especially he learns to make the necessary adjustment.

Das, Madhuchanda (1983) studied about educational facilities of secondary schools in and around Guwahati, and opined that the facilities existing in our school are very poor. Even now subjects are taught in such a way that pupil are forced to memorize while teaching scientific subjects like botany, zoology, chemistry, practical demonstration are given only in a very few schools. Even for subjects like botany, zoology, geography, etc. laboratory is needed because without practical experience, instruction would be just theoretical. But this is actually what is happening in many schools. For which students are unable to develop their inner potentialities.

Mishra, Abha. (1984) studied about an Evaluation of work experience in the secondary schools of Assam and said that work experience is socially useful and productive work in the schools, in the home, at the work shop or factory or any other establishment or productive situation. The objective at work experience is to supplement the purely academic education by dexterity of fingers in order to establish a better co-ordination between mind and hand to orient children between mind and
hand to orient children to the modern technological age, and above all to enrich the education given to them.

**Bhagabati, Nilima (1986)** studied about the co-curricular activities organized in the secondary schools of Assam, and its relevance on physical, social, emotional aspects of adolescent girls and boys, she opined that co-curricular activities has influence on the physical aspect of the adolescent girls and boys. The co-curricular activities provide emotional balance in many ways. In this study she found that the experimental group showed better adjustment than the control group, co-curricular activities has influence on the emotional aspects of the adolescent girls and boys of the secondary schools, and she interpreted that co-curricular activities has also influence on the social aspects of the adolescent girls and boys of the secondary schools.

**Deka, Hem Chandra. (1991)** studied about Achievement Motivation and Creativity in Stars and Isolates. The main objectives of the study was to study the differences of achievement motivation and creativity in ‘stars’ and ‘isolates’, to study the sex differences of achievement motivation and creativity in ‘stars’ and ‘isolates’, and to study the age wise differences of achievement motivation and creativity in stars and isolates. The main findings of the study was -

1. Stars were higher than isolates in an Achievement.
2. Younger girl stars were higher than boy isolates (both older and younger).
3. Boy stars (both younger and older) were motivated than older boy isolates.
4. Boy isolates were higher in an achievement than girl isolates.
5. Boys obtained high scores than girls.
6. Older boys obtained high scores on creativity than girls (both younger and older).

Saha, Kaberi (2001) studied about cognitive development at primary school children in relation to some select socio-educational variables. The specific objectives at the study were to study the effect of age on child’s cognitive development, effect of sex on child’s cognitive development, the role of intelligence on child’s cognitive development, effect of socio-economic status of the parents on child’s cognitive development, effect of facilities provided at home on child’s cognitive development, effect of school environment on child’s cognitive development, effect of method of teaching on child’s cognitive development, and concluded that intelligence and age of the child has direct influence on cognitive development. Most of the parents related variables found to have direct influence on cognitive development. Parent should be aware about these facts and try to provide proper environment to their children to facilitate the development. All the school related variables are found to influence the cognitive development of primary school children. There is also a clear developmental trend for cognitive development which is invariant in nature. Teachers needs motivation, interest as well as proper training particularly for primary school children to make the classroom situation lively so to engage the children in intellectually and socially satisfying activities. Teacher’s training programme should be re-organized. So to equip the teacher with the necessary skills and competencies and ideas to prepare highly professional and resourceful.

Tohsin, Rehana (2003) studied about the problem of creative education in secondary school with special reference to city of Guwahati; the major objectives of the study were
i) To find out the creative abilities of adolescent pupils

ii) To find out the development of creativity of both the sexes

iii) To find out the existing facilities in secondary schools of Guwahati managed by the government and private bodies.

The main findings of the study were:-

(i) The boys of thirteen years are more interested in creative activities than twelve years. On the other hand the girls of twelve years are more interested in creativity than thirteen years.

(ii) The pre-adolescent boys and girls as a whole confirmed the positive interest on creativity.

(iii) Girls are superior in creative abilities than boys

(iv) Government schools have less number of creative facilities than the private schools.

(v) Creative facilities are not adequate in our secondary schools and it need a suitable scheme in this field.

**Barua, Saswati (2004)** studied about organizational climate of government and privately managed high schools of kamrup district, from the study it was revealed that the standard of government schools are deteriorating day by day. Frequent bandhs, irregular salary, lack of initiative from the government, lack of awareness of the parent, political influence in the functioning of these schools, lack of up to date teaching materials etc are the major drawbacks, which is causing serious problems to the government schools.

**Goswami, Nishita (2007-2008)** studied about “Provision of co-curricular activities in the schools under CBSE and SEBA.”
The objectives of the study were:-

(a) To make a comparative study between the schools managed by CBSE and SEBA of greater Guwahati in respect of co-curricular activities.

(b) To find out the kind of co-curricular activities imparted to the students.

(c) To find out the awareness of students regarding the importance of co-curricular activities in their day to day life.

The major findings of the study were:-

(i) Almost 100% of the schools under CBSE and 100% of the schools under SEBA have the provision of co-curricular activities.

(ii) Co-curricular activities in the schools under SEBA and CBSE have not been a recent phenomenon; most of the schools started it quite early.

(iii) 100% of the schools under CBSE and almost 100% of the schools under SEBA have made co-curricular activities compulsory for the students.

(iv) More numbers of trained and qualified co-curricular activity teachers are available in the schools under CBSE then in the schools under SEBA.

(v) Students under CBSE background get more scope regarding the participation in different interschool competition than the students under SEBA background.