CHAPTER III

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3.1 Introduction:

In any research activity one cannot start blindly without the review of related literature. Review of related literature or survey of related studies are the important elements of research in social science. It is a general retrospective survey of previous writings pertaining to one's problem. It implies locating studying and evaluating reports of relevant researches, study of published articles, going through related portion of Encyclopedias and research abstracts, study of pertinent pages out of comprehensive books on the subject and going through related manuscripts if any. For any research worker in any field in social science needs, an adequate familiarity with the work which has already been done on the area of choice or selected problem for research.

Practically all human knowledge can be found in the books and libraries. Unlike other animals that must start a new with each generation, man builds upon the accumulated and recorded knowledge upon the past. He draws maximum benefit from the previous investigation, utilises the previous findings, take many hints from the design and procedures of previous researches, matches his conclusions with the conclusions drawn earlier and tries to add from his side a line or two to the existing store of knowledge.
3.2 Purposes of Survey of Related Studies:

The preliminary survey of previous studies, literature, discussions and experience related to the problem under investigation may accomplish a number of purposes. The research for related materials is a time consuming but fruitful phase of any research programme. Its specific purposes are:

(i) It helps the research worker to find what is already known about others have attempted to find out. What methods of attack have been promising or disappointing and what problems remain to be solved the problem adequately without further investigation.

(ii) It is the basis of most of the research projects in various sciences and humanities. It forms the foundation upon which all future work will be built.

(iii) It provides ideas, theories, explanations, hypothesis or methods of research, valuable in formulating and studying the problem.

(iv) The methods, measures, etc. as employed by others will lead an investigator to improve his research design.

(v) It prevents pointless repetition of research.
3.3 Research Reading:

Knowledge of the related investigations is gained most often through critical reading. Through every process i.e. locating and selecting the problem, analyzing the possible procedures, collecting evidence on any hypothesis, arriving at interpretation and conclusions, the matter of adequate reading ability is of supreme importance.

The act of research reading includes all the same skills that are involved in the act of discovery, keenness of observation, and readiness of available memory, range of imagination, and of course, a reason trained in analysis and reflection.

After making a comprehensive survey of related literature, the investigator organizes the pertinent information systematically according to the purpose outline of the study.

3.4 Review:

One major concern of the researches in this field had been the phenomenon of creativity. Creativity has been an enigma in that its very nature of being associated with divergent thinking has made it rather elusive to measurement and nurture. Yet, several researches have been conducted in this area. Kumar and Mitra (1979) have reviewed ten studies in this area. The present volume includes at least thirty studies directly concerned with creativity. Considering that the area is still young in India, it is quite an encouraging beginning.
Since the India researches in education and psychology are mostly in conformity with psychometric (measurement) tradition, the first evidences of research in creativity have been mainly in the form of test construction. Mehdi (1970), Passi (1972), Kaul (1974) and Ramchandranchar (1975) developed tests or batteries of test to identify and measure creative abilities. Since these studies have already been reviewed by Kumar and Mitra, they are not discussed in detail here. The only comment that may be added here is that these tests developed in India have really given the necessary initial impetus to research in this field. At least nine studies included in the present volume report that they have used Mehdi's test and at least two have used Passi's test. Four studies included in the present volume involve construction of tests of creativity. Two of these tests are for general creativity and the other two for scientific creativity. The tests of scientific creativity have been developed by Jhag (1979) and Shukla (1980). Jhag's test is based on the content of science subjects up to the high school level and comprises two parts. One pertaining to factors of divergent thinking and the other to convergent thinking, cognition and evaluate categories. Shukla's test measures six SI factors of twenty-eight enlisted by Guilford and comprises for sub-test, viz., consequences test, unusual uses test, remote association test and just think why test. The test re-test reliability and concurrent validity have been established. The
general creativity test developed are by Nair (1975) and Kishore (1981). The abstract does not say much about Nair’s test except that it includes fluency, flexibility, originality, elaboration and sensitivity to problems and redefinition. Kishore has developed a battery of verbal and non-verbal tests of creativity based on Torrance’s concept of creative thinking, again involving tasks revealing traits of fluency, flexibility, originality and elaboration.

The main research interest in this field, from an educational point of view is to see how this desirable but rare trait interacts with the other personality variables, cognitive and effective dimensions of learning and development, the environment at school, home and general social milieu in order to trace its possible casual and supportive factors. A logical extension to this and a typically educational concern could be to see how best creativity can be nurtured. Both these types of research studies have been undertaken. However, the emphasis has been explicitly on the first type, which are either correlational or comparative, taking creativity both as an independent and dependent variable Kumar and Mitra have reviewed a few studies of this type (Khire, 1971; Sharma, 1971; Goyal, 1974; Joshi, 1974 and Gakhar, 1975). In the present volume there are twenty-eight studies which test interaction of creativity with other variables.
A. regards the relationship between intelligence and creativity, the findings of the study have been rather equivocal. Raj (1978) finds that creativity discriminates between high and low intelligence groups of secondary students in Kerala. Sen Gupta (1979) reports that high and low creative students in a sample drawn from Delhi polytechnics, differed significantly on intelligence. Qureshi (1980) reports significantly positive correlation between intelligence. Mehdi (1977), Deshmukh (1979) and Kishore (1981) admit positive but low correlation between the two variables, among school children. On the other hand, Bhattacharya (1978) reports the level of creativity does not affect intelligence. Gupta (1980) finds both verbal and non-verbal creativity to be independent of intelligence. And, Muddu (1980) reports negative correlation between creativity and intelligence.

Another salient trend is an attempt at establishing relation between creativity and personality variables. Clear differences in the personality profiles between high and low creativity have been reported by Nair (Nair 1975), Bhattacharya (1978) and Muddu (1980). Paramesh (1970) reports significant boys in body image, barrier characterics and also theoritical and aesthetic values, but no difference in introversion, extroversion, neuroticism, etc. Nathawat (1977) also reports no difference in high and low creative adolescent boys in insecurity-
security feelings, neuroticism as well as certain neurotic manifestations, but finds significant difference in ego strength, body image, penetration characteristics, etc. Srivastava (1982) reports a positive relationship between the scores of creativity and those of different personality factors.

As regards the relationship between creativity and anxiety, Paramesh (1970) reports no relationship among adolescent boy while Jayaswall (1977) reports a negative and significant correlation between anxiety and creativity among teacher trainees. On the other hand, Qureshi (1980) reports that anxiety promotes creativity and its components. Dagaur (1981) observes, in school boys of Delhi, that some minimum-optimum level of anxiety is needed to evoke sufficient creative response of originality, While Sheel (1981) interestingly finds anxiety dependent on the fluency, originality dimensions of creativity, among Delhi undergraduate students.

A few studies cover the relationship between creativity and adjustment. Nair (1975) finds differences in adjustment variables between creative and non-creative high school students. No significant difference in home, health, social, emotional and school adjustment between high and low creative adolescent boys has been reported by Nathawat (1977). Asha (1978) confirms the above
finding except regarding emotional adjustment where significant differences have been reported among high, moderate and low creative secondary school students in Kerala. Singh (1979) reports a positive and significant relation between creativity and total social and educational adjustment among secondary school boys at Agra. Gupta (1981) reports that students with high and average adjustment tend to be more creative.

Apart from the personality variables and other organismic variables, certain relationship should be traced between creativity and the socio-cultural background. A few studies have catered to this. Medhi (1977) reports relationship between creativity and certain biographical variables among a sample of rural and urban school children of U.P and M.P. Ahmed (1980) finds influence of advanced home background and school background on the creativity of secondary and higher secondary school children. Creativity is found to be independent SES by Gupta (1980).

Several other variables have also been covered in the various studies included in the present volume. Frustration, aspiration, interest, achievement motive, values, attitude, emotionality, self-esteem, curiosity, extraversion, linguistic ability, birth order, problem-solving ability, etc., are the variables under study. Since such variables are not prominent among studies in this area, they have not been taken to draw any trend. This is, of course, but to disparage their significance; but only to say they do not demand elaborate discussion here.
Two studies on scientific creativity and its relation to certain variables have been included in this volume. Jhag (1979) reports scientific creativity to be normally distributed and significantly contributing towards the concrete versus abstract thinking. Shukla (1980) finds scientific creativity to be related with conservation of mass, weight and volume of solids and liquids.

On the whole, most of the relationships, tested through the studies, still remain not fully clarified. This is mostly because the findings have been quite equivocal. Attempts at meta-analysis, with a careful examination of the assumption involved and the methodology adopted by these studies are required for one to make any meaningful influence about the relationship among the variables.

As said earlier, an important concern of the education researcher with respect of creativity is its development and the possible curricular inputs that might prove fruitful for its nurture. This seems to be the next step in the evolution of this area of research. Probably, this trend is just starting to establish, since only two studies sharing this concern have been included in this volume. Kishore (1981) traces the development of creativity through the grades and age and reports that developmental curves for different creativity measures revealed a consistent increase from
Standard VI to VIII, i.e. from age 11 and 13. After the period, he reports, there seems to be a general decline except for non-verbal elaboration up to standard X, i.e. age 15. Elaboration shows a tendency to develop with maturity and experience. He further reports that the period of greatest potential productivity is between ages 13 and 14. Though chronologically later Kishore's work falls antecedent to Deshmukh's (1979) who tries to find out experimentally if appropriate manipulation of teaching-learning process could promote creativity. He reports that a strategy of learning Marathi and Social Science involving brain storming and role-playing has significantly enhanced creativity of the students.

3.5 Study Conducted in India:

First of all mentioned may be made of the Study conducted by Agrwal, S., on Creativity which aimed at to fulfill the following objections:

i) to study how far self esteem was related to creativity,

ii) to study the effect of variation in self esteem over creativity,

iii) to find out the relationship between risk taking and creativity, monetary risk taking and creativity,
iv) to study the effect of variation in risk taking on creativity in its various ramifications,

v) to study the extent of relationship between creativity and home background,

vi) to study the effect of variation in home background on creativity etc.

The study was conducted on the graduate students of Agra University. The sample comprised 200 male and 200 female students belonged to the age of 17 to 20 years. The tools used were Creativity Test, Risk-taking Questionnaire, Self-rating Questionnaire, Personality inventory on self esteem, and Tools for measuring home background.

The study gave the following conclusions:

i) Risk taking, more or less, was found to be a positive and significant factor in fostering creativity of both the sexes.

ii) Self esteem was found to be a significant factor to promote creativity, specially in the case of boys. In the case of girls, its impact was not very powerful.

(iii) Socio-economic conditions of played no role or very insignificant role in fostering creativity of both the sexes.
(iv) In all the designs, parental acceptance was found to be a very significant and positive factor in the development of creativity of both the sexes.

(v) Parental rejection was found to be a negative and demoting factor in creative development especially in the case of boys. In the case of girls its effect was not observable.

(vi) Except social risk-taking, other types of risk-taking and self esteem did not interact with each other affect creativity.

(vii) Risk taking and socio-economic conditions did not interact to influence creativity.

(viii) Risk-taking with its various ramifications did not interact with parental acceptance and rejection to influence creativity.

(ix) Self esteem and socio-economic conditions did not interact with each other to affect creativity of either sex.

(x) Self esteem and parental acceptance did not interact to influence creativity of either boys and girls.

(xi) Self-esteem and parental rejection did not interact significantly to influence creativity.
(xii) The three factors (risk-taking, self esteem, and home background) did not interact with one another to influence creativity.

Similarly, C.B. Asha\(^2\) worked on Adjustment Patterns of creative children. The major objectives of the study were.

(i) highly creative children differed significantly from their less creative peers in different areas of adjustment such as home, health, social and school adjustments,

(ii) highly creative children differed significantly from their less creative peers in adjustment to the problems stemming from the situation in which they found themselves and

(iii) whether better adjusted children children differed from their maladjusted peers in creative performance.

A test of creative thinking abilities, an adjustment inventory, a school adjustment inventory and personal adjustment inventory were the tools used in the study. The sample comprised 1,100 students of standard \(x\) drawn from twenty four high schools, giving proportional representation to the sex and location and the type of school. The sample was trichotomized into creative, moderate and low-creative groups within boys and girls for
comparison of adjustment in the seven areas for the first stage of analysis. The second stage of analysis was concerned with special problems of adjustment of creative children in relation to their special characteristics such as originality, curiosity, independence of thought and action, liking for novels and unconventional areas.

The study reported the following findings:

(i) None of the groups classified on the basis of creativity showed significant difference in health, social and school adjustment areas, for the boys and girls.

(ii) The three creative soups among the boys showed significant differences in emotional adjustment.

(iii) Only two sub-groups (high and moderately creative groups) of boys showed significant differences in home adjustment.

(iv) Although boys and girls differed significantly in adjustment to situations that are assumed to create problems for creative children, the six sub-groups classified on the basis of creativity showed no significant differences.

(v) The better-adjusted and maladjusted groups within each area of adjustment differed only in certain tasks of creativity, and these tasks differed for each area of adjustment.
(vi) When classified on the basis of problems concerning personality characteristics of creative children, the better-adjusted and maladjusted groups of boys differed in one task of creativity (similarities) and the moderately adjusted and maladjusted girls differed on one task (pattern meaning).

Further, in another type of study conducted by Bhattacharja, attempted to establish the interaction of creativity and personality.

The objectives of the study were:

(i) to construct and standardize a verbal test of creativity in Hindi,

(ii) to measure the interaction of fourteen personality factors of HSPQ and creativity on the achievement of students of classes IX and XI,

(iii) to measure the interaction of thirteen personality factors of HSPQ and creativity on intelligence as measured by factor B of HSPQ of students of classes IX and XI,

(iv) to measure verbal elaboration, comparability, literacy quantitative production and to find out their relationships with composite creativity, fluency, flexibility and originality scored and to draw their personality profiles, and

(v) to find out the personality correlates of creativity for those in classes IX and XI.
The study had been kept open-ended and no a priori hypotheses had been formulated. The sample was drawn on the basis of the incidental purposive sampling technique from secondary and higher secondary schools of Varanasi City. The total sample included 410 male students of classes IX and XI. Junior-Senior High School personality questionnaire Hindi version of HSPQ Group Test of General Mental Ability (Jalota), Verbal Test of Creative Thinking (Mehdi) and a verbal test of creative thinking developed by the investigator were used for collecting the required data.

The major findings of the study were:

(i) There was no interaction of creativity and the fourteen personality factors of HSPQ on the achievement of students of classes IX and XI.

(ii) Factors C, G, H, O4 and creativity interacted to affect the intelligence of those in classes IX and XI.

(iii) Levels of personality factors did not affect the intelligence of the students.

(iv) Levels of any of the fourteen personality factors did not affect the achievement of class XI pupils.

(v) Verbal elaboration had a significant positive relationship with composite creativity, fluency, flexibility and originality.
(vi) Comparability had significant positive relationship with creativity and its two components—flexibility and originality.

(vii) Literacy quantitative production was significantly and positively related to composite creativity and all its components—fluency, flexibility and originality.

(viii) The high creative secondary and higher secondary students were more warm-hearted, more outgoing, more intelligent, less excitable and more adventurous than the low creative secondary students.

(ix) The low creative secondary students were assertive and aggressive with weaker superego strength, whereas the low creative higher secondary students were conforming, dependent, shy, withdrawn and quick in seeing dangers.

On the other hand Deshmukh, M.N. conducted an analytical study factors associated with creative ability.

In the context of the education system emphasizing convergent thinking by classroom instruction, the study was designed to find out, experimentally, if appropriate manipulation of teaching learning process could promote creativity.
The procedure consisted of surveying the existing classroom instruction process for conditions to develop creative ability of pupils and conducting an experiment to investigate the efficiency of role-playing and brainstorming techniques in the development of creativity. The sample for survey comprised fifty one teachers of Marathi and Social Science randomly selected. The sample for the experiment included 114 boys and 30 girls studying in randomly selected three sections of class VIII in one of the twenty schools involved in the survey. The tools used in the study were Denny’s Classroom Creativity Observation Schedule (CCOS), Group Test of Intelligence (Khanapurkar), Socio-economic status scale (Kuppuswami), Torrance Test of Creative Thinking (TTCT), Minnesota Creative Checklist and students’ reaction schedule prepared by the investigator. For the survey, the teaching of each of the fiftyone teachers was observed at least twice on CCOS. The observations were made by three trained observers. The data were analysed for frequency with which each of the creative teaching behaviour occurred as postulated in CCOS. For the experimental group A by the role-playing technique, and group B by the brainstorming technique. The controls group C, were not given any treatment. Group A was taught Marathi for thirty class periods and Group B social science for an equal number of periods. Attempt was made to create conditions for physical and instructional openness,
removed of blockages to creative development, freedom of expression, psychological safety, minimum teacher and group constrains and maximum student participation and initiation, responsive motivational climate for extended effort while differing judgment and encouragement to divergent thinking and appreciation of unusual ideas during the experimental teaching. Multi-factor covariance design was employed for the compression of groups on post-test scores on various creativity and scholastic achievement variables. The t-test was used to find out sex-differences and creativity was calculated by product moment correlation.

The major findings were:

(i) The class-room teaching was found to be very low in motivation, student involvement and peer interaction. It was primarily convergent in nature.

(ii) Teaching through role-playing and brainstorming was characterized by high positive motivation, pupil involvement, positive peer interaction and encouragement to unusual responses. It was primarily divergent in nature.

(iii) Brainstorming was found to be more interesting and effective in establishing teacher-pupil rapport and encouraging unusual responses than teaching through role-playing.
Gains in creativity of the brainstorming group and losses the role-playing group were there irrespective of the level of intelligence.

In the role-playing group, law creative students gained on all verbal creative factors, figural originality and composite score for creativity.

Generally, girls performed better than boys on creativity.

There was moderate positive relationship between creativity and intelligence for various creativity factors.

Similarly, Kurien P.T. in his Study of Values and Attitudes of Children with Creative Abilities test the following hypothesis:

(i) Creativity variables would correlate significantly with values variable and attitudinal variables under study.

(ii) When contrasting creative groups were compared there would be significant differences in the mean scores on the value variables and attitudinal variables used in the study.
Data on eighteen experimental variables were collected through the administration of the Test of Creative Thinking, an adoption of the Allport-Lindzey Test of values, Mathew Materialism Spiritualism Scale land Social Attitude Scale. The sample for the study was made up of 1,200 secondary school pupils drawn from the high school population of South Kerala by the stratified proportional sampling method. Relationships were studied by the calculation of correlation coefficients through product moment method, and group were compared by testing the significance of differences between means for large independent samples.

Likewise, Nathawat, S.S. attempted to establish the relationship between creativity and mental health. The major objectives of the investigation were:

(i) to study the pattern of the adjustment in the areas of home, health, emotion, and school among the high creative, moderate creative and low creative individuals,

(ii) to measure mental health in these groups,

(iii) to find out the extent to which neurotic trends such as free floating anxiety, obsessional traits and symptoms, phobic anxiety, somatic anxiety, neurotic depression and hysterical personality traits were associated with creative behaviour, and

(iv) to evaluate ego-strength by barrier and low penetration scores in these subjects.
The initial sample of the study consisted of 320 adolescent boys of class X selected randomly from the high schools of Kurukshetra. They were administered the Wallach-Kogan Test of Creativity. The sample was then classified as high moderate and low creative groups on the basis of 75th and 25th percentiles. After the classification, 240 adolescent boys were retained as the final groups. They were administered four tests, namely, the Saxena Adjustment Inventory, the Maslow Security - Insecurity Inventory, the Middle-sex HospitalQuestionnaires and Rorschach Middlesex Psychodiagnostic Test:

The findings of the study were:

(i) No significant differences were found in the area of home, health, social, emotional and school adjustment among the high, the moderate and the low creative individuals.

(ii) The high creative individuals were not found different from the low creative and the moderate creative individuals insecurity-security feelings. The same relationship was observed between the moderate and the low creative individuals.

(iii) The high creative individuals were not different from the low and the moderate creative individuals in the level of neuroticism as well as in neurotic manifestations such as free floating anxiety, observations, phobic anxiety, somatic anxiety, neurotic depression and hysterical personality traits. The same pattern of relationship was seen between the moderate and the low creative individuals.
The high creative individuals were significantly higher in positive body image or egostrength (barrier score) than the low and the moderate creative individuals were at the same level of body image in terms of barrier score.

The high creative individuals were different in body image penetration characteristics as compared to the low creative individuals. The same relationship was found between the moderate and the low creative individuals. However, no significant differences were found between the high and the moderate creative individuals on penetration scores.

Furthermore, Dharmangadan adapted the Torrance Test of creative Thinking for use with school children in Kerala, and to determine the relationships between creativity and intelligence, temperament, motivation and certain selected environmental factors.

The tools used in addition to Torrance Test of creative Thinking (TTCT) were the standard Progressive Matrices, Test of General Mental Ability (verbal Form A) (George and Mathew), Personality Inventory (George Mathew and Nair), Inventory of Motivational Traits (George and Mathew) and personal data blank. The Torrance Test of creative Thinking was first tried out on a small sample of thirty six and then standardized on a second sample of 300 secondary school pupils. The relationship studies were done on a third sample of 631 secondary school pupils. Various statistical techniques were used to analyse the variables.
The results of the study were:

(i) One of the basis of the findings of the study, the Torrance Test of creative thinking was adapted for secondary school pupils of Kerala by making the necessary changes in content and instructions for taking the test. A new scoring guide was prepared.

(ii) The inter-measure correlation values obtained between the eight measures of the test justified the use of composite scores but the correlation values obtained between the two forms of the test, figural and verbal, however, did not suggest their reduction to a single score.

(iii) Sex, age and location differences were seen in the performance of the sample, but the interaction between the variables had no effect on the performance.

(iv) Moderately high reliability co-efficients were obtained for the whole Test with the reliability of the figural part being higher than the verbal part.

(v) The validity of the test, established by correlations of the performance of the sample with three independently chosen highly creative groups, was found to be adequate for the use of the test for research purposes.
(\i) Intelligence, both verbal and non-verbal, was found to correlate highly with creativity, and sex differences were significant. Intelligence was, therefore, partialled out in all further analysis, which was done separately for boys and girls.

(\ii) None of the temperament traits and motivationships between the different components of the socio-economic status index and creativity indicated a differential pattern.

(\iii) The birth order had significant relationship with verbal creativity only.

(\iv) The family size showed only weak relationship with creativity.

(\v) The relationship of the components of study habits and reading habits of creativity indicated a differential pattern.

(\vi) Extracurricular activities showed to relationship to creativity when quantified in two ways, except for girls who exhibited leadership qualities.

(\vii) Economic aspiration were related to verbal creativity for girls.

(\viii) Vocational aspiration was related to figural creativity for girls only.
Girls who chose unconventional vocations were found to be highly creative.

Mishra A attempted to develop an accurate test of creativity both in verbal and non-verbal forms and standardize it on the students of Grades VII and IX. The test was constructed on the lines of Guilford's scheme of classification of cognitive abilities and measure factors, viz., fluency, flexibility, originality and elaboration. An attempt was also made to validate the test with intelligence in orders to see whether any relationship existed between them.

The hypothesis formulated were:

(i) The distribution of the scores of creativity based on the creativity measures was normal for the total sample of the study.

(ii) Low relationship existed between creativity and intelligence.

(iii) There existed a significant difference between high and low individuals in the degree of extroversion measured through E scale and MPI.

(iv) The high creative individuals had a high score on introversion and a low score on extroversion.
The verbal test of creativity was planned to include four subsets, viz., unusual used, consequences test, product improvement and the similarity test. Non verbal activities as picture construction, picture object synthesis and picture completion were included and were measured for factors like fluency, flexibility, originality and elaboration. However, for the entire the study, a sample of 496 students of standards VIII and IX of both the sexes studying in government schools of Jodhpur was taken. The age of the subjects ranged from 12.5 to 15.6 years. The average age of the subjects was 14.4 years. The extent of accuracy and the appropriateness of items to be the behaviour domain were determined on the basis of the judgment of the experts having conceptual clarification of the trait components to be measured. The discrimination power and internal consistency of each item in the test were found out. Test re-test reliability co-efficients of the factor scores and total creativity scores for both the verbal and non-verbal tests were found from 0.64 to 0.92, which were significant at 0.01 level Interscorer reliability co-efficient for both the verbal and the non-verbal tests were found to be ranging from 0.63 to 0.92, which were significant at 0.01 level. The validity co-efficients between both the verbal and non-verbal tests and test of creative thinking developed by Baqer Mehdi were found to range from 0.32 to 0.77. The factorial validity co-efficients for the verbal and the non-verbal tests were found to be ranging from 0.30 to 0.89. Norms, percentile rank values and T-scores were also established.
Likewise, Sekhar, M. studied the relationship between creativity and Home Environmental Factors.

The objectives of the investigation were:

(i) to develop a paper pencil test of creativity suitable for Indian conditions,

(ii) to find out the relationship between creativity and home environmental factors,

(iii) to study the difference in relationship between creativity and home environmental factors arising out of sex differences and joint and nuclear family pattern,

(iv) to study the home environmental factors in terms of differential groups, namely high creative high IQ Vs high creative-low IQ, high creative high IQ Vs low creative-high IQ,

(v) to identify factor in the home environment conducive to creativity, and

(vi) to find an equation for predicting creativity scores on the basis of home environmental factors.
The method of stratified random sampling was used for the selection of the sample which comprised subjects 13 to 26 years of age. The tools employed for data collection were tests of creativity prepared for the purpose, measures of home environment, SES inventory and tests of verbal and non-verbal intelligence. Personal data were collected through response sheets. The data were analysed by using statistical techniques. Linear graphs, analysis of variance and t-ratios were computed. Regression equations were computed to predict creativity scores and factor analysis was done to identify the factors in the home environment conducive to creativity.

The major findings of the investigation were:

(i) Factors of cardinal parental relationship with younger siblings in the family showed a direct positive relationship with creativity.

(ii) the factors of acceptance of the parents by the child did not show any relationship with creativity.

(iii) The total number of siblings in the family showed a negative relationship.

(iv) The relationship of creativity with socio-economic status was found to be positive and curvilinear in nature.
(v) Factor analysis indicated that there were at least three factors in the home environment which affected creativity.

(vi) There was a difference in the home environment of single talented and double talented subjects.

(vii) Sex-wise and family wise analysis indicated a difference in the home environment of the two sexes and also in subjects belonging to different family patterns.

Finally, mention may be made of the study conducted by D'lima, C.D \(^{10}\), which aim at the following objectives:

(i) to make a comparative study of the different types of achievers amongst the different types of gifted pupils, namely, creativity gifted and intellectually gifted.

(ii) to find out the variables that significantly distinguish between the different pairs of groups of gifted pupils, and

(iii) to predict the achievement of gifted pupils with the help of the data gathered on psycho-social factors.
The sample consisted of students of standard IX from twenty five English-medium schools in . The tools used for data collection were Passi Test of creativity, Nafde’s Non-verbal Tests of Intelligence and various psychological tests to collect data on psycho-social variables.

The major findings of the study were:

(i) The double talent groups had a higher percentage of high achievers and the single-talent groups had a higher percentage of low achievers.

(ii) There was significant difference between the different types of gifted pupils.

(iii) The different types of gifted groups formed on the basis of intelligence and creativity seemed to be highly similar in academic achievement, social interaction, self-concept, academic motivation and independence stability.

(iv) The different types of gifted groups formed on the basis of intelligence and creativity differed in general intelligence, general talent and self reliance-dominance.

(v) There was significant difference between the low and the high achievers amongst the different types of gifted pupils.
To conclude the entire work of the present study had been planned on the basis of the study reviewed the Methodology, Tools, Collection of data and even the selection of sample were made on the line conducted by the different researchers on the line. The Analysis and Statistical Tools applied for testing are also based on the above finding.

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