CHAPTER II

REVIEW OF RELATED STUDIES

CREATIVITY

STUDY-HABITS
Many studies at the institutional Master's and Doctoral level have been conducted in the domain of creativity and study habits. The descriptions of these studies are available in different research journals, master's dissertations and Ph.D. thesis and in the first, second and third and fourth surveys of Research in Education edited by Buch (1974, 1986, 1991); Excellent reviews of these studies have also been made by Gupta (1974, 1980), Passi, Sansanwal and Jariai (1982) and Singh (1968). Dissertation conducted and completed at the M.Ed. and M.Phil. (Education) levels in different Universities have been excluded from this review, because they are more or less preliminary in nature and exploratory in character. An effort to review researches conducted in the area of creativity and study habits with special reference to Indian studies with a view to highlight the correlates of creativity as well as study habits. The related studies have been compiled in three categories viz:

i. Investigators

ii. Field of Investigation and

iii. Major findings

Their metaanalysis has been presented in a summary form in the succeeding pages:
**TABLE 1. REVIEW OF RELATED STUDIES: CREATIVITY.**

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<tr>
<th>S.No.</th>
<th>INVESTIGATORS</th>
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There is a positive and significant relationship between intelligence and creativity. At the age of 13+ creativity did not increase linearly just like intelligence. High intelligent subjects were significantly higher in creative thinking than the subject of low thinking.

Insignificant relationship between creativity and intelligent.


(c) No relationship between creativity and intelligence, No significant correlation between I.Q. and the creativity test.

(d) A low mostly positive and non significant correlation between creativity and intelligence in essentially different age groups at extremely variant levels (1975, 1981) education was found.

(e) Creativity training starts interacting significantly at above arrange level of intelligence but fails to show such stimulating effect with low intelligence groups.

(f) High intelligent subjects were significantly higher in creative thinking than subjects of low intelligence.

(g) Shalu (1971).
Relationship between Scholastic achievement and creativity.

A moderate, positive and significant relationship exists between achievement and creativity.

The high creative students were significantly high achievers as compared to the low creatives who were low achievers.

The highly creative individuals were found to be better achievers academically in comparison with their co-under parts with low creativity levels.

No significant difference was found in the scholastic achievement of high Locus of Control creativity.
03. (a) Bhogayata (1986)

Relationship amongst creativity, self-concept and locus of control.


Influence of variables viz. locus of control socio-economic status intelligence and types of schools in relation with perceived self-concept at the adolescent stage.

(c) Verma (1980)

Locus of control of high and low creative school students at different levels of socio-economic status.

(d) Gupta and Shrinivasan (1988)

Comparision of the locus of control of adolescents with high and low scientific mathematical and general creativity.

Boys were found to be more creative than girls but they did not differ in their self-concept and locus of control. It may be hypothesized that locus of control and self concept are two intimately related variables. A low to moderate positive relationship exists among teachers personal teaching efficiency perceptiveness.

Students who were highly creative had internal locus of control.

These exist significant inter group differences between adolescents with high and low creativity levels in the fields of Science, mathematics, Commerce and General fields.
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<tr>
<td>04. (a) De Hanna and Havighurst (1961)</td>
<td>Characteristics of gifted under achievers.</td>
<td>The study habits of the gifted under achievers are not as good as those of achievers.</td>
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<td>(b) Gupta and Srinivasan (1988)</td>
<td>Comparison between the study habits of adolescents with high and low creativity.</td>
<td>The study habits adopted by adolescents with high creativity are significantly more effective as compared to the study habits of their counterparts with low creativity.</td>
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<td>05. (a) Parmesh and Narayanan (1974)</td>
<td>Comparison between the interests of high and low creative college students.</td>
<td>Highly creative students were significantly higher than their low creative counterparts with respect to their interest.</td>
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<td>(b) Gupta &amp; Srinivasan (1988)</td>
<td>Comparison between the educational and career aspiration levels of adolescents with high and low creativity</td>
<td>Vocations chosen by adolescents with high general creativity have a greater range and diversity as compared to the choices of their counterparts with low creativity.</td>
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05. (c) i. Sundaragan and Rajasekar Occupational Aspirations, (1988).

i. Urban students have a better level of occupational aspiration than their rural counterparts.


ii. The Urban students were better than the rural students in both verbal and nonverbal creative thinking ability.

iii. Sharma (1972, 74).

iii. Rural students were significantly more creative than Urban students.

06. (a) i. Gupta (1974).

Creativity and its relationship with self concept among adolescents at the +2 stage in education.

i. The growth patterns for the different creative abilities and for the different aspect of self concept, show definite developmental trends in relation to age, grade and sex.

Significant differences exist between highly creative and less creative pupils on the basis of
their patterns of verbal and non-verbal creative abilities.

Creativity and self concept were found to be closely related dimension.

1. No significant relationship exists between creativity scores and different with birth order.

ii. First born children had higher creativity scores than the later born children.

A positive and democratic school environment is conducive to creative developmental factors in the school environment viz Class room interaction between the teacher and the taught, permissiveness, autonomy in the class
06. (c) Continue

Academic subjects and creativity.

atmosphere, arguments, debates, diverse information, ideas, disagreements, need fulfilling and need unfulfilling and laissez-faire atmospheres urbanity, democratic atmosphere, appropriate teaching strategies etc. are conducive to and contribute significantly towards the growth and development of the factor of creativity.

The science students were on the whole superior to their counterparts on creativity.

i. No. significant differences on verbal creativity were found between the groups of arts and science students.

ii. Between Arts and Commerce students.

iii. Between Science and Commerce students.
Sex is a probable determinant factor of creative performance. The performance of male subjects on the measure of verbal creative thinking was superior than female subjects. On the whole there is no significant difference between the creative potential of male and females. No significant results were found between the masculine and undifferentiated groups and between the feminine & androgynous groups. The boys were better than the girls in both verbal and non-verbal creative thinking ability.
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<td>09. Ray Chawdhar (1961 a) Getzels and Jackson (1962), personality and temperamental factors like curiosity risk taking conformity, non conformity, humour, value-orientation extraversion, introversion, neuroticism, determination and ambition, tididity, dashfulness motivation independence and dogmatism of groups of adolescents with high and low creativity.</td>
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<td>10(a). Singh (1991), Dubey (1994) Sex and scientific creativity. Sex as a variable discriminates between males and females. Males are better than females. Girls significantly differ from boys with respect to DMC, PLE, NMT(ori) DMT(ori) DMS, NSF, DFT, EMR factors of scientific creativity.</td>
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<td>11.</td>
<td>(a) Raina (1986), Shrivivasan (1991).</td>
<td>Analysis of studies pertaining to the relationship of home environmental factors with scientific creativity.</td>
<td>A home environment influence general creativity in particular and may also contribute towards the development of scientific creativity. Achievement in science was significantly related with scientific creativity viz. fluency flexibility, originality, inventiveness, productive designing ability and Scientific creativity are big and large normally distributed.</td>
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<td></td>
<td>(b) Stein (1956).</td>
<td>Home environment and scientific creativity on the basis of the study of biographies of chemists engaged in industrial research.</td>
<td>The more creative subjects were more distant from either parent and adults in general than their less creative counter parts.</td>
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<td>12.</td>
<td>(a) Balka (1974), Singh (1981).</td>
<td>The relationship of different variables like aptitude, achievement personality and interest patterns with mathematical creativity.</td>
<td>The creative students are significantly better in abstract thinking emotional stability, independence, self sufficiency, venture some, doubting relaxed, self concept.</td>
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control intelligence and achievement.

(b) Singh (1988)

Difference between Urban and Rural children with respect to personality correlates of creativity. Urban and rural high and low mathematical creatives were found to differ significantly from one and other with respect to personality factors social cultural and educational background, perception about parents, interest patterns, involvement of laissez faire activities and level of aspiration.

(c) Singh (1988)

Relationship between mathematical creativity and general creativity. Fluency, flexibility and elaboration dimensions of mathematical creativity were found to be significantly correlated with fluency flexibility and elaboration dimensions of general creativity for Urban and Rural Children.

Originally verbal and non verbal dimension of mathematical creativity were not
13. (1) Taylor (1963), Pearce (1968). Scientific creativity found significantly correlated with originality (verbal and non-verbal) dimensions of general creativity for Urban and Rural Children.

Home environment factors did not significantly relate to creativity.

Scientists were characterised among other traits by great energy, excellent health, greater circumference of their heads, steady perseverance, lively originality, stability, well-balanced temperament, freedom from excessive frustration, strength of character and judgement.

Subjects of the three types of personality differ among themselves in their verbal and total creative achievement. Extraversion seems to
be an important factor influencing verbal creativity and total creativity. Personal dominance, a marked preference for an esthetic design and complexity of design, and preference for mental manipulation involving things rather than people, high ego strength and were autonomous cautions, realistic, introspective, reserved and serious.

There is high significant difference in physical temperamental educational moral and intellectual factor of self concept among tribal and Urban students. Boys were significantly differed from girls in four components self concept TEM, EDU, MDR, INT, at both levels (.05 & .01).

(iii) Chaturvedi (1994)
Eight key characteristics of creative persons were determined:

a. Sensitivity
b. Fluency
c. Flexibility
d. Originality
e. Redefinition skill
f. Ability to abstract thinking
g. Ability to synthesize
h. Coherence of organisation

High level of intelligence, openness to experience, freedom from inhibitions and stereotype thinking, sensitivity, flexibility in thought and nature, love of creation for creation's sake, independence in thought and action and endless quest for new challenges and solutions.

Creative persons have rational optimism, high ago strength, realistic and healthy attitude towards life, openness to experience, assertive, self confidence, self actualization.
introverts were found to be more creative than extroverts. Creativity was positively and highly related with ego strength, the high creatives were consistently high on originality.

High creative adolescents exhibits greater introversion tendency as compared to their low creative counterparts. Personal Social adjustment, general anxiety, exam anxiety, achievement motivation, introversion-extroversion were found correlated with creativity.

Birth order and family size have important roles to play in the development of creative subjects. Birth orders do differ significantly among themselves in their creative achievement. First born subjects in large
Krishnan (1988)

families scored higher on the measure of non-verbal creative thinking than first born in small families and later borns in small and large families.

16. (a) Passi (1972), Desai (1987)

Creativity differences between Reservation and Urban Native (Americans) No difference in creative thinking ability of Urban and Rural higher secondary students, no sex differences with regard to creative thinking ability of higher Secondary Students.

(B) Bradely (1990)

Urban native American students are more creative than reservation. No significant differences were found between Urban and reservation students or between male and female students as regards their academic achievement.

(C) Dharmangadan (1981)

Creativity in relation to local. All the mean scores are in favour of the Urban children and the differences in flexibility and originality in measures are significant.
17. Schutz (1991)

The relationship between creativity and role modelling. Role modelling is an important enhancing influence for the creative person, both in conceptual terms and as a method of education which approaches the potential for development. Particularly the emulation stage of role modelling provides a link with the view of creativity as self-centralisation inner motivation and personal meaning making.

18. Kumari (1975)

Creativity in relation to some selected variables (Age, Sex).

One year of education did not put a significant mark on the development of creativity, while the difference of two years and above made some significant difference in creativity.

Subjects belonging to different age groups do differ significant among themselves in all the three types of achievement.
Sex does not seem to exert any influence on the scores of all the three types of creativity meanscores.

The mean scores of verbal and total creativity seem to increase progressively from standard IX to XII and the meanscores of subjects of different standards differ significantly among themselves.

Low and high creatives do differ significantly from each other in their verbal creativity but they could not be differentiated in their figural creative achievement.

In view of correlation, creativity and intelligence are found to be positively and significantly correlated with each other.
Creativity in relation to socio-economic condition.

Creatives came from high S.E.S. Students of high SES were superior to those of low SES, the higher the socio-economic status, the higher was the creative thinking ability of the student.

Students of small families were significantly superior to the students of average, and large families in fluency, flexibility and composite creativity, whereas they did not differ with respect to originality a component of creativity.

Creatives come from average SES.

There exists no significant difference in creativity of students coming from high average and low SES.
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<th>No.</th>
<th>Author (Year)</th>
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<tbody>
<tr>
<td>1.</td>
<td>Singh (1982)</td>
<td>Socio-economic status of the Urban students was higher than that of the students from Rural areas.</td>
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<td>2.</td>
<td>Desai (1987)</td>
<td>No significant difference between the means of high socioeconomic status students in the creative thinking ability.</td>
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<td>3.</td>
<td>Raina (1986)</td>
<td>Students belonging to middle socio-economic status and having high achievement scores were highest in scientific creativity and boys of low socio-economic status and possessing high problem solving ability were least creative.</td>
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</tbody>
</table>
Those who obtained high scores on the measures of creativity also achieved significantly better on the scholastic achievement test.

Male students were more creative than female students.

Rural learners performed better than urban learners with regard to divergent thinking.

The high class room climate high authenticity legitimacy and productivity, was found effective on the creative level of students of classes VIII & IX.

The achievement motivation had no effect on the level of creativity for the students of both students of both the classes.

There is a significant difference of means with respect to problem solving ability between H.S.T.P. and non HSTP. student in ....
favour of the HSTP students.

Urban students are better than Rural students in case of fluency, flexibility, originality.

The scores on all the discussions of scientific creativity viz "Fluency, Flexibility, Originality and Scientific creativity are by and large normally distributed.

The adolescents with high scientific creativity were found to possess a higher level of intelligence, better interpersonal relations with parents, teacher, friends and siblings, better capacity for initiating unique normal and interesting mix activities and completing them on their own, better academic achievement potential, significantly superior study-habits and better non-verbal creativity level as compared to their
counter parts with low scientific creativity.

The group of adolescents with high mathematical creativity were found to be superior to their counter parts with low mathematical creativity with respect to intelligence verbal creativity, non-verbal creativity over all creativity, scholastic achievement and study strategy.

Among the fourteen variables subjected to investigation, eight variables viz self reliance, withdrawing tendencies (freedom form) nervous symptoms (freedom form) family relations school relations and general anxiety discriminated significantly between the two groups. (Hi-Hc, Hi-Lo)
Obtained values of correlations show and that out of 24 personality traits chosen in the study fifteen were correlated positively with non-verbal creativity.

High and low groups of creative girls as identified on the basis of total verbal creativity differed significantly in respect of status, intellectual efficiency and flexibility and groups were found to be significantly differing on the personality traits of self-acceptance and self-sufficiency.

High creative females tended to be the victims of self-conflict they were moralistic and socially precise socially bold not having inhibition.
TABLE - 2. STUDY HABITS

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<td>01.(a)</td>
<td>Witten born Larsen and Mogils (1949)</td>
<td>Study habits and scholastic achievement.</td>
<td>Attempt was made to correlate the various indices of academic performance with students reports on study practices. Biserial correlation co-efficients were computed for the thirty significant items in each questionnaire. It was observed that a large number of study-habits were related to the criteria. Positive and significant relationship between academic achievement and study-habits exists. Scores in the study habits inventory correlated significantly. Over achieving and under achieving students differed significantly in respect of study-habits. The over achieving males had better study-habits.</td>
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<td>01.(b)</td>
<td>Diener (1960)</td>
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</table>
(c) Nirmal Kanta (1979)  
Scholastic performance in various school subjects had low but positive relationship in the study habits.

(d) Ramawami (1990)  
Study habits are significantly related to academic achievement among two achievers in boys, high and low achievers in girls and not significantly related to academic achievement among high achievers in boys.

02.(d) St. Mary Esther, Sister Study habits and intelligence (1945), Brooks and Heaton (1945).  
No significant relationship between study habits and intelligence was observed.

(2) Remmers, Horton and Denniel (1955).  
Positive relationship was found between verbal ability and frequency of using the recommended study procedure.

(3) Jammur (1958).  
There exists no relationship between intelligence and study habits.

Study habits of adolescent boys.
and adolescent girls differed significantly at different level of intelligence i.e. high, middle and low.

Even in the fields of reading skills and study skills, factors of motivation and personality structure were on the whole considerably more significant than the difficulties in mechanical procedures.

Good study practice was related to students liking for school and the importance he placed in earning high grades.

Statistically significant differences were found between the study activities of the stereo typed and non-stereo typed students. The study behaviour of students was quite similar to that expected from their personality structure.
Major factors of consideration were desk placement finish and size eye position, and placement of light sources relative to the ease and efficiency of the visual aspect of studying conditions. Temperature, lighting and other environmental conditions were conducive to efficient study.

Male students had better study habits than girls. Rural students were slightly better than the Urban students. Urban students (excepting at XII) had better study habits than Rural students. Urban boys showed significantly higher scores on study habits than Rural boys but there was no significant difference between the study habits of Urban and Rural girls.
There was no difference in the study habits of boys and girls.

Adolescent boys had significantly better study habits than adolescent girls.

Girls excelled boys in various components of the study habits.

Study habits of adolescents boys and adolescent girls differed significantly at different levels of academic achievement high, middle, and low.

Girls in all classes and in arts and science courses had better study habits than boys.

Senior students had better study habits than Junior (B.A.) students.

Individuals varied in respect of study habits.

A few factors of personality, study habits.

There was a significant difference in favour of the experimental group on SPIN (Summarising Predicting Inferencing and Note taking) evaluation and there was no significant difference on the study attitudes subscale.

On comparison between Study habits of adolescents with high and low creativity, he found out that the study habits adopted by adolescents with high creativity are significantly more effective than the study habits of their counterparts with low creativity.


The fail groups of students of class X and Class XI boys of the total sample have earned significantly lower mean value on study habits than of the "Pass" group.

In the class XI girls of the "Fail" group are significantly lower on their study habits than those belonging to the "Pass" group.

The 10th class boys, 10th class girls, Class XI as a whole, total girls, Arts, Commerce & Science faculty students belonging to the "Fail and Pass"
groups are not found to differ significantly on their study-habits and attitudes.

Asummer intervention to promote book reading at home yielded statistically significant increase.

Student interviews, Parent interviews and observations provided detailed information on the interactions occurring as books were read at home and at school, changes found in students attitudes and knowledge of book reading activities.

More than half of the subjects had deficient study habits but only a small percentage 19.5% had significantly low self concept scores. In addition, at risk, students who participate in school activities had higher self concept scores than non participating at risk.

Arkake (1989)

Carpenter (1990)  Self concept and study habits.

Study habits of adolescent boys and adolescent girls differed significantly at different levels of socio-economic status interacted significantly in relation to the study habits of adolescent boys and girls.

It was concluded that low self-concept does not appear to be as significant a factor of students being at risk as does their poor study habits.
The following conclusions can be crystallized on the review of related studies:

(a) Existing studies in the field of creativity research have focussed attention on pupils staying at the middle and high school stages and at the college level. Creativity at the +2 level of education, which is a major cut off point (NPE 1986) for educational vocational and personnel purposes, has received scant attention from researchers. There is much scope for undertaking more research studies at this stage, which has been paid to maximum attention in the N.P.E.

(b) With emphasis in the N.P.E. (1986) on mass orientation, vocationalization, scientific approach to teaching and learning, scientific temper etc. There is a great need to undertake studies exclusive to the streams of science and mathematics at 10+2 stage so that a new impetus based on empirical evidence can be given to the theoretical justification of our planners for the development of talent in the fields of Social Sciences, teaching learning process in education, skill development and competency acquirement in pupils at the 10+2 level in our educational institutions.

(c) Even though some exploratory studies have been conducted in the field of creativity and academic subjects, educational and occupational aspirations, achievement, aptitude personality and

(d) Indian investigators have studied creativity in the form of scientific creativity or mathematical creativity in relation with variables like intelligence, locus of control, interpersonal relation study habits, vocational preferences, self images, self initiated activities and scholastic achievement respectively but still there arises a need for conducting studies in the area of remote tribal regions. their study-habits, culture, sibling relationships effect of birth order in the development of creativity and artistic and aesthetic perspective of Scientific creativity.

(e) Very few investigators have looked into the necessity of studying study-habits as a correlate of creativity independently but study-habits as a variable for study in the different dimensions have been chosen by Gupta and Srinivasan 1988, Ramaswamy 1990, Srinivasan 1991, to study the habits of adolescent creative boys and girls, but the gap still remains to correlate the creativity of Higher Secondary students with their study habits. The present
study has attempted to fill in the gap in the bridge of knowledge and research.

Some investigations have been made in the area of study-habits and investigators have tried to find out different demarcation between study-habits and other variables like Scholastic achievement, intelligence, personality factors, sex locale, grade, home and school environment, self concept in India and abroad. Some of them are:

Wittenborn, Larsen and Mogils (1945), Michel and Reader (1952), St. Mary, Esther 1945, Brooks and Heston (1945), Gladstein (1960), Rammers, Horton and Domiel (1955), Vedvalli (1953), Chatterjee (1955), Nirmal Kanta 1979, Chauhan and Sing (1982), Ayiward (1990), Vyas 1993, but they had dealt with a single view of study-habits. The present study has covered the global aspect of Study-Habits. Study-Habits have been studied through a triangular view e.g. Sex, Residency and Class covering high and Higher Secondary Stages of school studies. Similarly study-habits have been correlated with creativity, so as to know the liner relationship between creativity and study-habits.