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Research Article

IMPACT OF HOME ENVIRONMENT AND INSTITUTIONAL CLIMATE ON CREATIVITY OF HIGH SCHOOL STUDENTS

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ABSTRACT

The present study was undertaken in Kurukshetra city, from where 180 10th grade boys and girls were selected by using cluster sampling procedure. Ex-post facto method was adopted for investigation. The main purposes of the study were to find out the significant differences in the creative ability of high school students belonging to boys and girls, different birth order, nuclear and joint family and to study the interaction effects of these variables on creativity of the students. The result of analyzed data did not show any significant differences at 0.05 level of significance, so it indicated that there was no significant difference in creative ability of high school students belonging to boys and girls, different birth order, nuclear and joint family as a whole. It was also found that there was no interaction effect of these variables on the creativity of the high school students.

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INTRODUCTION

It has generally been realised today by all nations, whether big or small, developed or developing, communist or capitalist, that their mere survival very much depends upon how effectively they can conserve and utilise their most precious human resources i.e. their gifted children. EMERSON says that the greatness of nation varies with the number of genius it produces and the honour in which it holds them. Nevertheless, it has been gradually realised that it is not merely intelligence but creativity which is responsible also for the progress of mankind or society. However, man is beset with endless obscurities of nature and well-high lost in the darkness ignorance and unconsciousness that surrounds him. But he is bestowed with a 'soul' by the Almighty which refuses to be imprisoned. It aspires for light, creates openings in the enclosing walls by aspiration and pushes in the direction for its fullfledgedness. From the day of the evolution, man has been continuously trying to explore the cause and effect of each and every happening and strictly for excellence in every walk of life. The goal of education in terms of increased capabilities, personal expressing, greater inventiveness and blossoming of the gifted children cannot be fully realised in the absence of adequate knowledge of creativity. Thus, creativity is a capacity which leads to innovations in sciences, humanities, performances in fine arts or new thoughts. However, there are

different factors which influence the creative abilities of the students directly and indirectly, such as; home environment, institutional climate, heredity etc. which have been revealed from different research studies.

Barsh (2006) studied the home environment and creative and artistic activity by taking three artistically exceptional third grade art students, their parents and their previous year teachers. The result showed positive relationship among the home environment, creativity and artistic activity of students.

Paramith and Indarti (2013) examined the impact of environment support on creativity and assessed the mediating role of intrinsic motivation. The findings showed that the support from co-workers is influential to promote the creativity of the employee. Surprisingly, the supports from supervisor and family provide no significant impact on the creativity.

Alfuhaiqi (2015) published a review paper on the school environment and creativity development. He wrote that a creative school environment is one that exposes learners psychologically and socially to facilitate creativity in which learners are motivated to discover things by themselves. It was also mentioned that effective school environment helps students to develop the creative personality traits.

Lew (2015) studied the effect of the home environment on adolescents' creativity in Korea by taking 510 students. The

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findings revealed that the students' creativity was significantly co-related to factors of home environment. It was also found that the students from families that provided better environment had a higher creative ability than others from families with a poorer environment.

Deng, Wang and Zhao (2016) studied the effects of environmental factors and individual characteristics on the creativity of students of United State and China. The results indicated that creative attitudes and divergent thinking sequentially mediated the effects of parental values on creative achievement for the US samples, where as openness mediated the effect of high school education on creative achievement for China sample. The results suggested cultural difference in the effects of environmental factors on creativity, yet more similar findings in the effects of individual characteristics on creativity between the two samples.

Sharma (2016) studied the effect of school and home environments on creativity of children. A sample of 200 ninth class students were taken from Chandigarh city of India. The significant 't' values showed that the creative stimulation, cognitive environment dimensions, permissiveness dimensions of school environment effects the creativity of school children to a certain extent.

The above studies have examined the impact of school and home environment on the creative abilities of students in Soudi Arabia, Indonesia, Korea and India. However, a little studies have been undertaken in India, therefore the investigator developed keen interest to examine the effect of home environment and institutional climate on the creativity of students.

Rationale of the Study

Today is a matter of growing concern that the creative spark in children be developed and conserved through all means at our disposal with the hope on increasing the world's resources of creativity exists in some degree, to some extent, in all children and is unique in each individual. In some children creativity urge is strong enough to find expression. In others it is under surface waiting for an opportunity to disclose itself. Although the development of creativity depends on many factors in the educational environment, so the role played by the institutional environment and home environment in the same cannot be underestimated.

Different psychologists opined that just as different individuals have different personalities, different institutions have different institutional environment. Hence, it is not only important but essential also to study the different types of school climates in relation to their effects on the growth and development of creativity of pupils.

It is all the more important, therefore, that parents and other members of family who are at the helm of affairs, should put in determined efforts to check further loss of time, to enable our school going children to develop their creative abilities so that huge personal and social wastage may be reduced with maximum benefit to the individual and to the society. According to the Indian Education Commission (1966), 'The talent of a child has to be located early and allowed to grow in the best of atmosphere and under the best teacher.'

The nature and extent of relationship between creativity, home environment and institutional climate happens to be a subject which, though of great theoretical, has largely remained unexplored at the hands of research workers. It has, for example, been postulated that creativity develops in a stimulating environment. Since children pass more of their precious and active time during formative years in home and schools, the influence of home environment and institutional climate on the growth of their creative abilities cannot be ruled out. The present study therefore is likely to be of great importance in explaining the effect of home environment and institutional climate on creativity.

Research Questions

As per the above needs of the study the following research questions were emerged in the mind of the investigator;

1. Is there any impact of institutional climate on creativity of high school students?
2. Is there any impact of family orientation on creativity of high school students?
3. Is there any significant difference in the creative ability between high school boy and girl students?
4. Is there any significant difference in the creative ability of high school students belonging to different birth order?
5. Is there any significant difference in creative ability in high school students belonging to nuclear and joint families?
6. Are there any interaction effects of family orientation, institutional climate and other demographic variables on creative ability of high school students?

Objectives of the study

The objectives of the present study were as follows:

1. To study the impact of institutional climate on creativity of high school students
2. To study the impact of family orientation on creativity of high school students
3. To study the significant difference in the creative ability between high school boy and girl students
4. To study the significant difference in the creative ability of high school students belonging to different birth order
5. To study the significant difference in creative ability in high school students belonging to nuclear and joint families
6. To study the interaction effects of family orientation, institutional climate and other demographic variables on creative ability of high school students

Hypotheses of the study

The hypotheses of the present study were as follows:

1. There exists no significant difference in the creative ability between high school boy and girl students.
2. There exists no significant difference in the creative ability of high school students with different family orientation.
3. There exists no significant difference in creative ability of high school students with respect to different birth order.

4. There exists no significant difference in the creative ability of high school students with respect to different family types.
5. There exists no significant difference in the creative ability of the high school students with different institutional climates.
6. There exist no interaction effects of family orientation, institutional climate and other demographic variables on creative ability of high school students.

Delimitations of the Study

The present study had the following delimitations

- It was limited in that the study of relationship between institutional climate, home environment and creativity of 10th grade boys and girls studying in one particular city (Kurukshetra).
- The study of institutional climate of schools was limited to those dimensions and areas only which are covered in the institutional climate inventory.
- The study was restricted to the variables of creativity, sex, home environment and institutional climate only.
- Besides, two main variables- home environment and institutional climate- the impact of some demographic variables like sex, birth order, type of family and type of school on creativity were also studied in the present study.

Design of the Study

Variables of the study

The independent variables of the study are; home environment and institutional climate, on the other hand, creativity of students is the dependent variable. In the present study the independent variable is not manipulated but its impact on the creativity of students is studied.

Research Method

As in the present study independent variable is not manipulated and its impact is studied, so casual comparative or Ex-post facto research method was adopted for investigation.

Participants of the study

In the present investigation a sample of 180 students of X grade (boys and girls) of secondary schools of Kurukshetra district of Haryana was selected by using cluster random sampling technique by lottery method. Proper care was taken to make the sample free from sampling error as far as possible.

Instruments

The following instruments were used for the present study

Scientific Creativity Test

The scientific creativity test constructed and standardized by Dr. S. M. Gupta was used in order to test the scientific creativity of the sample students. The shorter version of the test consisted of twelve items. The items of the test were of divergent type, there was no fixed answer, and the students were required to give as many as response to an item. The language of the test was Hindi and the students were to give response on the test-sheet itself. The test is scored on three dimensions viz: fluency, flexibility and originality. The split

half reliability and criterion validity coefficients of this test were 0.84 and 0.61 respectively.

Institutional Climate Inventory

For the measurement of institutional climate in different schools, A. K. Gupta's Hindi adaptation of Joshi's 'Institutional Climate Inventory' was used by the investigator. The modified inventory like its original in English has two parts. The Part A measures the need patterns which consisted of 42 items, while Part B gives a measure of the pressure provided by the educational institutions, information about which is derived from pupil's responses which consisted of 30 items. The test-retest reliability coefficient of Part A and Part B were 0.672 and 0.688 respectively.

Family Orientation Scale

The investigator used Hindi adaptation of Sangita Gupta's 'Family Orientation Scale' in order to study the experiences that the individual has in the early life at home, with his family members. It had four parts, Part A: Family aspirations from the child to raise or maintain social prestige, Part B: sibling relationships, Part C: Parent-child relationships, Part D: Parent-parent relationship. The test retest reliability coefficient was found to be 0.889 and the criterion validity was to be 0.648.

Collection of Data

The data was collected by administering the tools mentioned in the preceding caption. After selecting the schools, the investigator went to the principals of the concerned institutions and introduced herself and sought permission before administering the test.

At the time of actual administration of the tests, necessary steps were taken to control and minimize the copying and guessing habits of the students. For this purpose the subjects were motivated by introducing the purpose of the test.

Statistical technique

The analysis of the data for the present study had been made in conformity with the objectives and hypotheses as formulated by the investigator. The main purpose of the study was to find out the difference in creativity of high school students belonging to different sexes, home environment, institutional climate, sibling position and birth order, so the following statistical techniques were used

- Calculating the mean of the score
- Two way (2*2) and three way (2*2*3) analysis of variance

Analysis and Interpretation

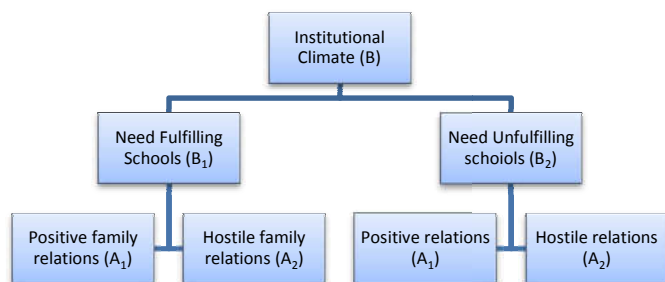
The present investigation was aimed at exploring the difference brought out by the variables such as sex, type of school, family type, institutional climate and sibling position on the scientific creativity of high school students. So, as the investigator was interested to find out the interaction effects of various variables on creativity, analysis of variance statistical technique was employed instead of 't' test.

Sub-Section A

Study of mean differences in creativity in relation to family orientation and institutional climate

In this sub-section A, the objective of the study was to see the significance of difference in creativity of students having different family orientation and institutional climate. For this the ANOVA was utilised.

There were two levels of family orientation (A₁ and A₂) and two levels of institutional climate (B₁ and B₂). Thus 2*2 factorial design was prepared as given below;



Creativity scores of students belonging to four different cells were computed separately. However, as number of observations in each cell was not equal, so mean values were calculated for each cell which was utilized as a single value for computing differences in means through analysis of variance. The mean creativity scores of students belonging to need fulfilling and need unfulfilling schools and having positive and hostile family relations followed by summary of ANOVA results are shown in Tables 1 and 2 respectively.

Table 1 Mean creativity scores of students belonging to need fulfilling and need unfulfilling schools and having positive and hostile family relations.

	Need-Fulfilling (B ₁)	Need-Unfulfilling (B ₂)
Positive family relation (A ₁)	58.265 (N= 49)	59.509 (N= 57)
Hostile family relation (A ₂)	56.773 (N= 44)	56.300 (N= 30)

Table 2 Summary showing ANOVA results of mean creativity scores in relation to family orientation and institutional climate

Sources of variation	Df	SS	MS	F-Ratio	Significant Level
Family Orientation (A)	1	5.525	5.525	1.49	N. S.
Institutional Climate (B)	1	0.149	0.149	0.04	N. S.
Interaction	1	3.454	3.454	0.93	N. S.

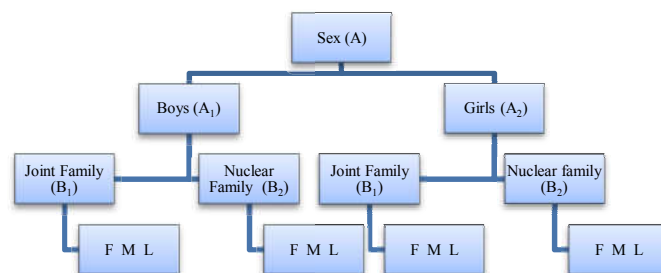
N. S. – Not significant at 0.05 level

Sub-Section B

Study of mean differences in creativity in relation to sex, sibling position and type of family

In this sub-section B, the investigator dealt with the study of mean differences in the creativity scores with respect to sex, sibling position and type of family of the students, for this

purpose three way analysis of variance technique was applied. Here, two levels of sex, two levels of type of family and three levels of sibling position were taken, so 2*2*3 factorial design was applied which is as follows;



Here,
 F- First Born Students
 M- Middle Born Students
 L- Last Born Students

Mean creativity scores for each of the 12 cells of the factorial design was computed separately. The mean creativity scores of different cells followed by summary of analysis of variance results are shown in Table 3 and 4 respectively.

Table 3 Mean creativity scores of first, middle and last born boys and girls belonging to joint and nuclear families. (N= 180)

	Boys		Girls	
	Joint family	Nuclear family	Joint family	Nuclear family
First Born	60.60	61.13	59.20	51.21
Middle Born	58.80	58.27	59.00	58.33
Last Born	51.80	53.55	59.00	63.75

Table 4 Summary showing ANOVA results of mean creativity scores in relation to sex, type of family and sibling position

Sources of variation	df	SS	MS	F-ratio	Significant Level
Sex (A)	1	3.246	3.246	0.21	N. S.
Type of family (B)	1	0.389	0.389	0.025	N. S.
Sibling position (C)	2	5.107	2.554	0.165	N. S.
A x B	1	2.657	2.657	0.172	N. S.
A x C	2	104.512	52.256	3.385	N. S.
B x C	2	24.417	12.209	0.791	N. S.
A x B x C	2	17.732	8.866	0.574	N. S.

N. S. - Not significant at 0.05 level

Testing of Hypotheses and Interpretation of Results

The application of the statistical technique of ANOVA to the data of the present study, inevitably leads the investigator to interpret the results,

Hypothesis- 1 stated that boys and girls will not vary significantly in relation to their creativity.

Table 4 revealed that the calculated value of F= 0.210 in relation to sex i.e. smaller than the table value 3.90 for 1/168 df at 0.05 level of significance, hence the null hypothesis was accepted at 0.05 level of significance. It means that the sex as a single main variable does not show a significant difference on the scientific creativity.

Hypothesis- 2 stated that there will be no significant difference in pupil's creativity in high schools with different family orientation.

Table 2 revealed that the calculated value of 'F' (1.49) in relation to creativity is smaller than the tabulated value 3.90 for 1/179 df at 0.05 level of significance, so the null hypothesis cannot be rejected. It signified that family orientation as a single main variable does not show any significant difference on the creativity. It means that there exists no significant difference in the creativity scores of students having positive and hostile family relation.

Hypothesis-3 stated that there will be no significant difference in pupil's creativity in high schools with respect to different birth order.

Table 4 revealed that the obtained value of 'F' (0.165) in relation to birth order is smaller than the table value (3.90) for 1/168 df at 0.05 level of significance, since the obtained value is smaller than the critical value, the null hypothesis cannot be rejected. It implies that birth order as a single main factor shows no significant difference in relation to creativity.

Hypothesis- 4 stated that there will be no significant difference in pupil's creativity in high schools with respect to different family types.

Table 4 revealed that the calculated value of 'F' (0.025) in relation to family type is lesser than critical value of 'F' (3.90) for 1/168 df at 0.05 level of significance, hence null hypothesis is accepted. It signified that family as a single factor shows no significant differences on creativity. It means there exists no significant difference in creativity scores of both joint band nuclear families.

Hypothesis-5 stated that there will be no significant difference in pupil's creativity in high schools with different institutional climate.

Table 2 revealed that the calculated value of 'F' (0.149) is smaller than the critical value (3.90) for 1/179 df at 0.05 level of significance, hence the null hypothesis cannot be rejected. It means that the institutional climate as a single main variable has no significant difference on the creativity.

Hypothesis-6 stated that there will be no interaction effect among different variable combination under study, viz. family orientation, institutional climate, sex, types of family and birth order with creativity of high school pupils.

Table 2 revealed that the calculated value of 'F' (0.931) in relation to interaction effect of home environment and institutional climate is smaller than the table value (3.90) for 1/179 df at 0.05 level of significance, since the calculated value is smaller than the table value, the null hypothesis is accepted at 0.05 level of significance. It indicated that family orientation and institutional climate together do not seem to show any significant interaction on creativity.

Table 4 revealed that the calculated value of 'F' in relation to interaction effect of sex and family type (0.172.) of sex and sibling position (3.385) and of family type and sibling position (0.791) is smaller than the table value of 'F' (3.90) for 1/168 df at 0.05 level of significance, so the null hypothesis was accepted. Thus, it indicated that sex and family type, sex and

sibling position and family type and sibling position together do not have any significant interaction on the creativity respectively.

Table 4 revealed that the calculated value 'F' in relation to the interaction effect of sex, family type and sibling position (0.574) is smaller than the table value of 'F' for 1/168 df at 0.05 level of significance, so the null hypothesis cannot be rejected. It indicated that sex, family type and sibling position together don't show any significant effect on creativity.

Main Findings

The process of interpretation is one of the stating the results. The statistical techniques employed to analyze the data of present study leads to the following main findings;

1. Sex, family orientation, institutional climate, family type and sibling position did not show any significant difference on creativity as single main variable.
2. The two-way interaction effects of family orientation and institutional climate on creativity scores was found to be insignificant.
3. The two way interaction effect of sex and family type in relation to creativity was found to be insignificant.
4. The two way interaction effect of sex and sibling position showed no significant effect on creativity of students.
5. The two way interaction effect of family type and sibling position did not have any significant effect on creativity of students.
6. The triple interaction effect of sex, family type and sibling position showed no significant difference on creativity of students.

DISCUSSION OF RESULTS

The results of the present study showed that sex, family orientation, institutional climate, family type and sibling position did not show any significant difference on creativity as single main variable. It was also found that there was no interaction effect of the variables (home environment, institutional climate etc) on the creativity of the students. The findings of the present study is supported with the study of Paramith and Indarti (2013) who found that the support of supervisor and family provide no significant impact on the creativity. However the other research studies viz. Barsh (2006), Lew (2015) Deng, Wang and Zhao (2016) and Sharma (2016) found significant impact of home and school environment on the creative abilities of students.

Educational Implications

The present study has its implications for teachers, administrators, parents and also for students.

As it is true that creative children are assets to the development and progress of society, the main duty of teachers and parents is to identify the creative potentialities of the students at an early age and help them in developing these potentialities.

Thus, it is a concern of the home and schools to ensure that their children make a useful contribution to the society and the national development. The future of our civilization and our survival depend upon the quality of the creative potential of our posteriori. This is all important because the outstanding

creative ability of a fairly small percentage of the population is mankind's ultimate capital asset and the only one with which man has been endowed.

CONCLUSION

The not significant F ratios show that creative methods and creativity is not being given importance either in our institution or in home. The whole education system revolves around examinations. So, the schools and homes don't have appropriate climate for the development of creative potential which the study points out in an effective way.

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