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Study for correlation and relationship of home and school environments with creativity

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Abstract
Researches in this and related areas have employed different methods of study for investigating the relationship of home/school environments with creativity. It is difficult to say which of them is most appropriate because each method has its own merits and demerits. Methods of research are sometimes determined by the theory of the topic under study, objectives of the study, resources of the investigator. These considerations have led the researcher to use the normative survey method of research for the present study.
Students of class IX of city areas of the district headquarters of Agra region constitute the population of this study. The study was confined to male student only. Female students were not included in the population because home environments and creativity of males have been found to differ from those of females. The two sexes need separate studies. Thus results of this study will be applicable to male population only.

Keywords: creativity, school environments, relationship, study

Introduction

It is a more important stage of general education. At this stage a strong effort is needed to encourage boys and girls to follow vocational and educational courses. Students during this state will belong to 14+ age group, the fourth stage in the childhood as delineated by Piaget (1958) [1] "The fourth stage is the final childhood stage preparatory to adult thinking, and develops between 12 and 15 years of age. It involves the appearance of formal operations as opposed to concrete operations. It is characterized by the development of the ability to use hypothetical reasoning based on the logic of all possible combinations and to perform controlled experimentation." Piaget used the term "operation" here to mean a type of action, it can be carried out either directly in the manipulation of objects, or internally, when it is categories or propositions which are manipulated. He regards thinking as a creative initiated by the organism, and not simply a "response to a stimulus". (Piaget, 1970) [2]. Individual child structures his experience. Thus it is evident that in this later stage of child development, subjects will exhibit greater amount of creative thinking. David H. Russel (1958) has observed: "it is only the materials which he can handle that the five year-old, say, differs from the twelve or the seventeen year old" [3]. This statement does not imply that the five year old is as capable a thinker as the fourteen year old. In the first place, a fact that he does not have the same store of percepts, memories and concepts to draw open, means that he is not able to do the same amount of relational thinking. He has not as many classes or hierarchies to manipulate in problem solving. Another important difference in the thinking of persons five, ten and fifteen years of age lies in the motivational area [4]. Emotional controls, interests and attitudes all of which may affect thinking change with years (Piaget, 1950 [5]. At these three successive stages the thinking may tend to be egocentric, peer group dominated, and more broadly social because of related developmental factors. Such factors may affect the outcome or products of child's thinking. Thus, students in 14+ age group, as included in the sample will yield more comprehensive and correct answers to creativity and environment measuring tools. This justifies their inclusion in the sample of this study.

Tools Used

Suitable tools are to be chosen in order to accomplish the aims and for the collection of data. This selection of tools for a particular study depends upon various considerations such as the objectives of the study, the amount of time at the disposal of the researcher, availability of suitable tests, personal competence of the investigator, techniques of scoring and interpretations and the like. Taking these factors into consideration following tools will be used by the researcher-

1. Home Environment Inventory for Children (constructed and standardized by the investigator).
2. School Environment Inventory (developed by the investigator).
3. Culture Fair Test of Intelligence.
4. S.E.S. Scale, Urban form
5. Verbal and Non-verbal tests of creative thinking.

The details of the above mentioned tests are as follows:

Socio-Economic Status Scale: (A Scale for measuring socio- economic status of urban people).
The questionnaire of this scale seeks information about the following component variables:

A. Parental Occupation.
B. Parental Education and Education of Sisters and Brothers.
C. Economic Index- Income, House Type: Material Possession.
D. Cultural Level of the Family as judged by the Expenditure on newspaper, magazine and material possession.
E. Psychological Indicators-as level of aspirations, concept of social prestige and belief in caste determining the tendency toward conservatism or progressivism.

Norms and Scoring
The distribution of same on which S.E.S. scale has been developed, Further, the S.E. variable was divided into five categories taking two units together.
When standard score norms are converted (With the obtained mean and S.D.) into raw scores, following categories could be obtained within which the testees will be classified, *viz*, upper strata, upper middle strata, lower middle strata, Upper lower strata and lower strata.

Reliability and Validity of the S.E.S. Scale
Coefficient of stability was calculated by the test- retest method. The correlation of the scores of 50 students taken at two different times with and interval of one month.
Original scale was also applied to these fifty students. The concurrent validity of this scale was established by testing identifiable groups. When the scale was administered to students studying in La Martineir College, Lucknow, where generally children from upper class go to study, it was noted that their mean score is beyond the mean score for the hole group.

Uses
This test has widely been used by Indian students in their research studies. The culture free test aims to single out the most consistent case of basic mental capacity. This culture-fair test provides a measure of general mental ability, free from verbal materials and from the required skills of most performance test.
The test consists of four parts of a four sub-tests, they are:

1. **Series:** Selecting one of several drawings to complete a series.
2. **Classification:** Crossing out the one irrelevant drawing in each row.
3. **Materials:** Making the one drawing, of several that correctly file the incomplete pattern.
4. **Conditional:** Inserting a dot in the appropriate one of several designs, the structure of which is consistent with the condition.

Administration
This test can be administered by those persons, who are trained or who have clearly understood the direction and instruction given in the manual. Each sub-test is preceded by a practice exercise, which includes directions and administration and the testing time.

Scoring
Scoring is done by mans of printed keys and in the present investigation the score of each individual is the sum if right answers can be converted into IQ. However, for the present investigation the sum of right answers will be considered.

Reliability
Reliability coefficients are on the whole, reasonable satisfactory, when the split-half method was used and when retesting took place within a very short time.

Validity
The real basis of validity of an intelligence test is its correlation with construct or concept of intelligence in the general ability factor. Correlation with an older intelligence test is of no more a basis for comparison of two new tests than would be evaluation of the relative goodness of two modern electric clocks on the basis of the extent to which they keep time with medieval water clock. However, it is of interest to know its agreement with older tests.

Torrance Tests of Creative Thinking
These tests are very popular in this field and consist of four batteries of test activities- two verbal and two figural. These were created and assembled after about four or five years of research. Test tasks are fairly complex and have features that make use of what we know about the nature of creative thinking processes, the qualities of the creative products and creative personalities.

Verbal Tests contain seven subjects which require individual to (a) ask questions about an unusual picture, (b) guess cause of the action in the picture, (c) guess consequences of the action in the picture, (d) think of ideas for improving a stuffed toy monkey or elephant, (e) list unusual uses for card board boxes or tin cans, and (f) predict consequences of an improbable event.

Reliability of Scoring

An experiment was conducted to determines the extent to which unselected classroom teachers can reliable score Verbal and Figural forms A and B of The Torrance Tests of Creative Thinking without any training other than individual study of the scoring guide.

Test-Retest Reliability

A number of test-retest reliability studies have been conducted with verbal and figural forms A and B of these tests. The results indicate higher test-retest reliability coefficients for figural tests and for fluency and flexibility than for originality and elaboration.

Validity

To ensure content validity, a consistent and deliberate effort has been made to base the test stimuli, the test tasks, instructions and scoring procedures on the best theory and research results available. Test tasks have been kept free of bias from technical or subject matter content. One special advantage of the test tasks is that they can be administered at all educational levels.

A variety of long range predictive studies with these tests of creative thinking have yielded encouraging evidence.

Statistical Procedures to be Adopted

A. For graphic presentation of the data-"Frequency Polygon" will be used. Following things will be studied on the basis of frequency polygon.

1. The study of the distribution of scores, central tendencies of the distribution.
2. Study of the skewness and kurtosis on the basis of these two, investigator will judge how far the frequency polygon is representing to the normal curve.
3. To read the modality of the frequency polygon. We know that pearson product moment coefficient of correlation is applicable only when there is no bimodality or multimodality in the polygon. The frequency polygon is the most easiest but important way in throwing light on these things.

B. Appropriate statistics will be used to analyze the data. However, if data are found to be normally distributed, product moment correlation, partial correlation, multiple correlation, multiple regression analysis, t-test etc. may be used to explore the relationships between various variables.

Variables Involved

The present study involved three kinds of variables, namely:

a. Dependent variable
b. Independent variable
c. Controlled variable

a. Dependent variable: Creativity (Verbal/nonverbal) is the dependent variable in this study. This was measured by Torrance Tests of Creative thinking...

b. Independent variable: In this study home environment and school environment will be used as independent variables. For their measurement two inventories will be constructed and standardized by the investigator himself.

c. Controlled variable: The purpose of the study is to see how creativity is related to home and school environments. Here, only S.E.S. sex, intelligence and age have been controlled. Sex will be controlled by restricting the study to male students only. Age is to be controlled by selecting students belonging to 14+ age group in this study. S.E.S. will be controlled to find out second order partial correlation.

Conclusion

To control the effect of intelligence, correlation between home environments and creativity: and between school environment and creativity will be computed after partialing out intelligence. Correlations will be calculated between intelligence and creativity and between home environment and creativity respectively. The partial correlations between home environment and creativity will be computed after partialing out the factor of intelligence.

Same computations will be done with school environments creatively, partialing out intelligence. Thus, intelligence will be controlled through partial correlation.

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