CHAPTER I

THE BACKGROUND OF THE PROBLEM

The world's achievements in every period are shaped by creative abilities of talented persons. The milestones of human history were installed by creative achievements in the past. Not only the material advancement but also the progress in art and literature, scientific discoveries and evolution of dynamic social and political orders have been the contribution of creative persons. Moreover, the future of the human race itself depends upon the quality of creative endeavours likely to be made for solving vital problems of life. Historical records provide evidence that cultures have collapsed because of the failure to utilize the creative power of their people (Rogers, 1954; 1).

It is all the more important for the development of a fully functioning, mentally healthy, well educated and vocationally successful individual. Therefore, to train

the talent of gifted individuals should be our foremost duty. The situation in this connection seems to be alarming in our country. The Kothari Commission (1966; 2) states, "The misfortune is that we in India face a great shortage of such trained talent in every walk of our national life."

The most effective instrument in the hands of society to train the talent of a potentially creative person is education. A system of education geared to educate the intellectually gifted child effectively would require early screening and identification of gifted children so that the whole educational system may be adopted to the requirements of their smooth and speedy growth. Strang feels, "...Unless they are identified, special provision for their needs cannot be made. Worse still, they may be subjected to experiences that discourage the natural use of their abilities." The prevailing practices for the education of the intellectually gifted children can be well understood in the Commission's (1966) observation where it reports:


"Even the talent that enters school and succeeds in climbing the educational ladder does not flower fully because it is not discovered sufficiently early and is often studying in poor schools. For obtaining the best results in quality talent has to be located early and allowed to grow in the best atmosphere and under the best teacher."\(^4\)

It was assumed that under the present circumstances, the intellectually gifted children, can at the most, be admitted in the public schools, the central schools and other A-grade schools in the country since relatively better incentives for competent teachers as well as the learners are available there. But the investigators' own observation\(^5\) provides a discouraging picture because these schools too do not make any special arrangements to detect, to select and to educate the gifted children.

However, certain efforts are being made at centres of advanced research to develop some tests for screening and identifying potentially creative children at the school level. 'Such for Science Talent' tests have been introduced by N.C.E.R.T., to select gifted students.


\(^5\) Vide Appendix 'A'.
after Higher Secondary School stage. Departments and colleges of certain universities e.g., Regional College of Education, Ajmer, Departments of Education, Psychology and Physics, M.U. Aligarh, Department of Education, Punjab University, Chandigarh, Central Institute of Education, Delhi, Department of Education, Baroda University, have been developing/adapting certain tests of creative thinking but they are hardly put to use at the school level. No tests, perhaps, are used to screen and identify potentially creative children at early stages of school life. By the time, the potentially creative children pass their Higher Secondary examination, their talents may be clouded by external pressures. Therefore, it seems essential to develop such tests of screening and identifying potentially creative children that can be used at the early stages of school life. For this purpose, one may need to understand the factors that influence the future growth of intellect.

Potential creativity continues to develop from childhood to maturity. It tends to continually unfold itself as the child responds to his environment. On the other hand, it may be blighted by extreme deprivation of love, by lack of intellectual stimulation or by limited opportunities for leadership. Although biological factors limit the number of potentially superior individuals,
many who have a high potential at birth do not realize their potentialities. Some of them simply choose not to be different in a society that encourages conformity. Under favourable conditions, truly potentially creative children may be expected to actualize their talents. The personality structure which includes a drive towards high level performance activates the potential creativity. It is also common observation that being intellectually/gifted does not depend upon the potential creativity alone but on personality factors and the nature of future environment as well. To Haye (1962) it seems valid to infer that an appropriate combination of potential creativity, an estimate of the quality of one's future environment, measures of relevant experience and certain personality traits would yield appropriate prediction of future level of creativity.

The factors that can be used as the basis to forecast future level of creativity in the present circumstances may be (1) potential creativity, and (ii) certain personality dimensions/traits that motivate the intellectually gifted child to learn more. The concept of potential creativity and its relationship to personality dimensions of creative person seem basic to understand

the problem of identifying and screening the educable creative adolescent. The problem would remain vague without specifying the abilities from the cognitive domain which constitute potential creativity and which are functionally related to personality dimensions. Further, if such factors of potential creativity and personality dimensions are explored in large number, another problem would be to investigate small number of factors which can account for the whole variance of tests representing the two domains.

The investigator found it difficult to pinpoint the problem without understanding the cognitive factors which determine potential creativity. It would not be out of place to state that the divergent thinking abilities were found, theoretically as well as empirically, as the major and distinct cognitive domain of potential creativity, whereas dimensions like openness of mind, non-conformity, strong ego, autonomy, independence of judgment, introvert, were assumed as major functionally related constituents of creative personality. In this background, the problem becomes clearer and understandable.

7 Vide, Chap. II,
STATEMENT OF THE PROBLEM

Many obvious questions which can be raised after this information are: (1) What functional unities of divergent thinking existed at different stages of the adolescent period? (2) What personality dimensions are functionally related to the factors of divergent thinking abilities at different levels? (3) Is it possible to explain the factors of divergent thinking, personality dimensions, and the functional relationship between the domain in terms of lesser number of factors? The first two questions pose another problem of knowing whether the abilities of divergent thinking remain constant during the adolescent period or do they change. The nature of these questions reveals that the potential creativity, for this project, has been considered to be determined by divergent thinking abilities and certain personality dimensions functionally related to the former. It is in this background, that the investigator planned, "to factor analyse divergent thinking abilities in relation to certain personality dimensions of Higher Secondary School adolescents".

AIMS OF THE STUDY

The present study is a modest attempt to investigate -
(1) The functional unities of divergent thinking that exist at different stages of adolescent period (11 to 15\*), i.e., VIth to Xth grade. This would also help us to verify Garrett's hypothesis about the ability of divergent thinking.

(2) Such personality dimensions of divergent thinking adolescents that are functionally related to the factors of divergent thinking.

(3) Small numbers of factors that can be used to identify and to screen potentially creative adolescent at one level of the adolescent period (particularly Xth grade - 15\*).

Thus this study aims at exploring determinants of potential creativity at the adolescent stage. The factors would be helpful for the teachers and the headmasters of good schools in selecting and identifying the educable creative adolescent. The findings would provide the basis to evaluate the programme of education for gifted children if it blocks the creative growth. Many students who are rejected by class-mates, teachers and head-masters due to their 'silly' ideas, would find special place in the scheme of education. Not only this, the gifted children would develop better confidence in their competencies in order to achieve their aspired goals. Further, in solving the problem, spade work for developing
a battery of tests of divergent thinking would be done. The battery may be standardized at some later stage.

PROCEDURE IN OUTLINE

This study was conducted in two stages. The first stage aimed at finding answers to the first question (p. 7), to develop and select valid tests for the second stage, and finally to generate hypotheses. Whereas at the second stage, the purpose was to verify the hypotheses so that the two aims (p. 7) would be achieved. In order to achieve these objectives, the study was conducted according to the following plan.

1. At the first stage, the battery of tests of divergent thinking was developed on the lines of Guilford, Getzels and Jackson, Wallack and Kogan, and Torrance for school going adolescents. Item validity in each was calculated by correlating the scores on an item with the total scores by applying Cov. Reliability coefficient/were calculated by applying Rulon's formula/split half/inter-scorer techniques.

2. The battery of tests of divergent thinking was administered to adolescent boys and girls studying in VI (average age 11 years), VIII (average age 13)
and X (average age 15 years) grades. The extraneous factors like age variations within the group, I.Q. and socio-economic status were controlled as far as possible. The correlation matrix obtained by calculating zero order correlation \( r \) was factor analysed by Principal Component Method. The change in factor pattern was studied at this stage.

3. Hypotheses were generated on the basis of results of the first stage and theoretical background of the problem. Tests suitable for the second stage were selected out of the battery and some new tests were included in the battery.

4. The battery of tests of divergent thinking and questionnaires of personality dimensions were administered to the X grade adolescents only. Functional relationship between every selected personality dimension on the one hand, and factors of divergent thinking that correlated significantly with the former on the other, were calculated by multiple correlation. The correlation matrix consisting coefficient of correlation \( r \) among the selected factors of divergent thinking and personality dimensions was factor analysed by Principal Component Method with a view to find out a lesser number of factors determining potential creativity.
BASIC ASSUMPTION

It was assumed that potential creativity grows in complexity and intensity along with intellectual development and that it is normally distributed among the school going healthy boys and girls. The potential creativity was considered to include cognitive domain as well as personality dimensions. It was assumed that the abilities of divergent thinking are the major and distinct factors that determine cognitive domain of potential creativity. The personality dimensions, like openness of mind, autonomy, ego-strength, nonconformity, determine the personality aspect of potential creativity. And since the development of personality dimensions is affected by the nature of the mode of thinking, the intensity of concomitance between the abilities of divergent thinking and personality dimensions would also play a role in determining the future growth of creativity.

LIMITATIONS

The scope of this study has been limited by the following considerations:

1. The study is limited to the students studying in X and equivalent grades of A-grade Higher Secondary
Schools and Public Schools of Rajasthan State. The reason for selecting students from these schools were (a) availability of large number of divergent thinking students, (b) relatively homogenous group with respect to socio-economic status, and (c) similar educational facilities in schools. The latter two factors were considered very essential to decide the uniqueness of an idea/object.

2. The study was confined to X or equivalent grades because unlike XI grades, these students were not appearing in public examinations. The students of IX or equivalent grades were not selected because it was too early a stage to observe the effect of knowledge assimilated upto eighth or equivalent grades.

3. The samples consisted of boys and girls both because it was assumed that intellectual growth was not affected by sex difference.

4. Factors of divergent thinking expressed through figural, semantic and symbolic contents were selected. The behavioural content was ignored due to reasons given later in the second chapter.
DEFINITIONS OF TERMS

1. **Divergent Production**

A formal definition of "divergent production" reads: "generation of information from given information, where the emphasis is upon variety and quantity of output from the same source; likely to involve transfer (Guilford)."

In order to make the intellectual operation of thinking more specific and meaningful, the term thinking is replaced by 'product'.

2. **Personality Dimensions**

Good's definition of personality dimension has been used as a basis of measure this variable. According to this definition, a personality dimension is "the aspect that can be measured or that is hypothesized to vary quantitatively along a continuum....".

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In order to establish relationship between creativity and divergent production, and divergent production and personality, on the basis of psychodynamics of the creative person, a theoretical frame was evolved and which has been dealt with in the next chapter.