

NON - COGNITIVE CORRELATES OF CREATIVITY  
AMONG THE SECONDARY SCHOOL STUDENTS.

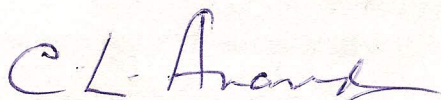
*Thesis submitted for the Degree of*  
DOCTOR OF PHILOSOPHY IN EDUCATION.  
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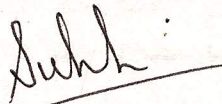
1987

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This is to certify that the thesis entitled 'Non-Cognitive Correlates of Creativity among the Secondary School Students' submitted by Mrs Varparhi Khiangte for the degree of Doctor of Philosophy in Education of the North-Eastern Hill University, Shillong, is a record of bonafide study and research carried out by her. This thesis or any part thereto has not been previously submitted for any degree in this or any other University.



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Varparhi Khangte

## DECLARATION

I hereby declare that the thesis 'Non-cognitive Correlates of Creativity Among the Secondary School Students' or any part thereto has not been submitted for any degree in this or any other University.

Place: Aizawl

Date: 30th June, 1987

  
(Varpachi Khiantse)

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## INTRODUCTION

Any nation committed to human resource development can hardly ignore the problem of detecting and fostering talent among her youth. It is being increasingly recognised that human talent is a resource no less important for the current affairs and future progress than material resources. The talent development is, in fact, a necessary pre-condition for progress and planned development. The national planners in India, therefore, have rightly emphasized the development of human resources through the educational programmes. Asking for increased allocations to education is a testimony to the concern for the development of human resources through education.

The developments over the last two decades, however, make it clear that "desired improvements have not been materialised because neither the resources nor the measures for restructuring were commensurate with the imaginative and purposeful thrust of the education policy adopted in 1968".<sup>1</sup> Till recently, the stress has purely been on the intellectual side. Creative potential, the most precious human resource, has not been given much attention. Nevertheless, it has now been realised that it is not merely intelligence but also creativity which is responsible

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1. Ministry of Education, Challenge of Education- a policy perspective.

for overall progress. Creativity has become a central concept in educational research only very recently although creative thinking ability has been considered the highest of mental functions and creative production the peak of human achievement. Barron (1968) points out: "our capacity for creative thought and action may literally make all the difference in the world .... Human creativity may prove to be the key to success or failure in mankinds quest for knowledge, in his journey beyond the bounds of the sure and the seen, in his exploration of the unknown."<sup>2</sup> It was Toyanbee, the famous historian, who considered creativity as man's greatest asset and one of the most valued qualities. "Creativity <sup>is</sup> the type of talent which can make history through reshaping man's world and it is <sup>a</sup> matter of life and death for any society."<sup>3</sup> The talent, thus needs to be assessed, nursed and nurtured through congenial educational climate. Again, <sup>in</sup> the words of Torrance, "the survival and progress of any society is closely dependent upon how it can conserve and utilize the precious human resource, the creative potential."<sup>4</sup> Seen in the above perspective, conservation and proper utilization of creative potential assumes special significance.

2. Barron, F. Creativity and Personal Freedom, New Jersey; D. Van Nostrand Company Inc., 1968.

3. Toyanbee, A, "Is America Neglecting her Creative Minority?" in Taylor, C.W. (ed.) Widening Horizons in Creativity. New York ; John Wiley and Sons Inc. 1964.

4. Torrance, E.P. Guiding Creative Talent. Englewood Cliffs, N.J.: Prentice Hall, 1962.

### Need for the Study

India needs men of creative thinking ability who can produce a number of solutions for the problems facing the society, envisage different strategies, find original and novel ideas and view the problem from various angles. In this regard, the Education Commission(1964-66) observed that the talent has to be located early and allowed to grow in the best atmosphere and under the best teachers. This indicates that an understanding of the concept and correlates of creativity is essential for the identification and fostering of creative talent.

Not much work seems to have been done in the area of creativity in India. The studies conducted are mostly among the urban and more advanced regions. (Mehdi; 1985; Passi, 1982; Raina, 1969).<sup>5,6,7,8,9</sup> In a remote area like the North-East region, no substantial research has been done in this field. The North-East region of India presents a somewhat unique situation. The presence of a relatively large number

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5. Mehdi, B. "Research on Creativity" in S.K. Pal and P.C. Saxena (eds.) "Quality Control in Educational Research"; New Delhi: Metropolitan, 1985; 469 - 493.
  6. Passi, B.K.: "Creativity in Education, Agra: Psychological Corporation, 1982.
  7. Raina, M. "Creativity Research in India" The Journal of Creative Behaviour" 1969, Vol. 3: 111 - 114.

of racial and ethnic groups living as neighbours within a limited geographical region makes the region unlike other parts of India. Their racial and cultural backgrounds are different, and as result, they are not equally developed socio-economically and educationally. The tribal population of the region has remained comparatively backward and isolated from the mainstream of Indian life. This peculiar position of the tribals is being given special attention by the Central and the State governments. In all national and state plans of development, the yearning of these groups for a better life is being taken into consideration. However, not much seems to have been done for the fostering of talents in these regions. Consequently, there is a tremendous amount of wastage of the tribal talent due to the neglect and failure to identify and promote the potential to develop in conducive conditions.

There are few studies undertaken in the area of creativity or personality in the tribal regions. The significance of personality and other non-cognitive factors have been emphasized for planning the educational programmes and for fostering the creative talent (Parnes, 1972; Raina, 1971; Taylor, 1961; Torrance, 1970). <sup>8,9,10,11</sup> Mizoram,

~~E. Raina, M.L. Research on Creative Functioning in India: A Review Indian Educational Review. 1971, 6, 2: 260-280.~~

8. Parnes, S.J. Creativity: Unlocking Human Potential. Buffalo D.O.K. 1972.

9. Raina, M.L. Research on Creative Functioning in India : A Review Indian Educational Review. 1971, 6, 2: 260-280.

10. Taylor, C.W. "A Tentative Description of Creative Individual" in W.B. Waelzen (ed.) Human Variability and Learning, Washington, 1961.

11. Torrance, E.P. Encouraging Creativity in the Classroom, Dubuqua Iowa Wm C. Brown, 1970.

~~J. McCall, A.C. Light London, 1948.~~

the newly formed state in the North-East has tremendous potential for development. The land came under the influence of British missionaries after being annexed by the British in 1891. The people were converted to Christianity, and they discarded their former animistic belief and some of their social customs and practices. Introduction of formal education, adoption of the Roman script for the Mizo language and the subsequent expansion of education are the other beneficial results of the missionaries' efforts (McCall, 1949<sup>12</sup>). The people have retained a consistently high rate of literacy (53.79 percent in 1971 and 59.88 percent in 1981) and are rated fourth in the all-India census.

But, in spite of the consistently high rate of literacy and the tremendous expansion of education, professionally trained manpower necessary for the development of the community appears to be lacking.<sup>13</sup> The lack of proper facilities and absence of a congenial climate to detect and cultivate the creative potential, may, among others, be important factors in this regard. This prompted the investigator to undertake the present research in order to examine the level of creative thinking ability and the personality characteristics of the creative students in the secondary schools in Mizoram.

12. McCall, A.G. Lushai Chrysalis, London: Lusac, 1949.

13. Sudhir, M.A. and Lalrinkimi, Modernity in the context of Education and Sociocultural Factors: A study of Social Attitudes in Mizoram. The Journal of Social Psychology, 1986, 126 (3): 375 - 380.

### Statement of the Problem

Researches in the field of creativity have so far focussed primarily on the nature and concept of creativity and its relationship with intelligence and such other cognitive factors as scholastic achievement, language skills, memory and recall. Several attempts have been made to understand the personality traits associated with creativity (Barron, 1953; Getzels and Jackson, 1962; Mackinnon, 1960; Taylor, 1961; Torrance 14,15,16,17,18 1965).

In his personality studies of highly creative children, Torrance (1962) observed that three personality characteristics stand out, differentiating the highly creative children from the less creative but equally intelligent children. First, the highly creative children have a reputation for "having wild silly ideas" especially the boys. Secondly, their work is characterised by the production of ideas "off the beaten track", "outside this world". Third, their work is characterised by "humour, playfulness, relative lack of rigidity, and relaxation".<sup>19</sup>

14. Barron, F. "Some Personality Correlates of Independent Judgement" Journal of Personality, 1953, 48, pp 287 - 297.
15. Getzels, J.W. and Jackson, P.W. Creativity and Intelligence: Explorations with Gifted Students, New York : Wiley, 1962.
16. Mackinnon, D.W. Personality and the realization of Creative Potential. American Psychologist, 1965, 28: 273- 281.
17. Taylor, C.W. Research Findings on Creativity Characteristics Studies in Art Education, Fall 1961, 3, No. 1, 9-16.
18. Torrance E.P. Rewarding Creative Behaviour, New Jersey, Prentice Hall, 1965.
19. Torrance E.P. Guiding Creative Talent. Englewood Cliffs, N.J.; Prentice Hall, 1962.

Taylor(1962) also gives picture of the creative individual, as "unconventional and as resisting the drives towards conformity and the conventional thinking often found in schools,"<sup>20</sup> Barron (1958) in his studies of highly creative people found them "more original, less suggestible and more tolerant of structural disorderliness."<sup>21</sup> Drevdahl (1956)<sup>22</sup> and Drevdahl and Cattell (1958)<sup>23</sup> found various creative groups low in extraversion, more concerned with ideas than with people, and rather uninterested in activities of a social nature. Taylor and Ellison (1964)<sup>24</sup> reported self-sufficiency and low sociability among the creative scientists, while Getzels and Csikszentmihalyi (1964) provide similar data for art students.<sup>25</sup> McClelland (1963) suggested "a willingness to take risks" as an important characteristic of a creative individual.<sup>26</sup> It has, however, to be noted that the comparisons

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20. Taylor, C.W. Who are Exceptionally Creative? Exceptional Children, April, 1962, 28: 421 - 429.
  21. Barron, F. The Psychology of Imagination. Scientific American, Sept. 1958, 199: 150-166.
  22. Drevdahl, J.E. Factors of importance for Creativity. Journal of Clinical Psychology, 1956, 12, 21 - 26.
  23. Drevdahl, J.E. and Cattell, R.B. Personality and Creativity in Artists and Writers Jou. Clinical Psychology 14; 107-111.
  24. Taylor, C.W. and Ellison, R.L. Predicting Creative Performance from Multiple Measures in Taylor, C.W.(ed.) Widening Horizons in Creativity, New York; Wiley, 1964; 227-260.
  25. Getzels, J.W. and Csikszentmihalyi, M. Creativity Thinking in Art Students: An Exploratory Study. Cooperative Research Project No. E008. Chicago University, p. 1964. p. 202

of creative and noncreative individuals have produced both conflicting and inconsistent observations on a variety of non-cognitive characteristics and the picture is very uneven. Further, it has been found that "certain personality characteristics may lead to high creativity in some social settings but not in others, and some kind of social environment may be conducive to high creativity for certain types of personality but not for others" (Mehdi, 1979).<sup>27</sup>

The present study has been designed with a view to examine the creative thinking ability among the secondary school students in Mizoram. The relationship between creativity and personality characteristics; sex differences, and locale differences in the context of personality correlates of the creative students were also studied. Accordingly, the study was entitled; "Non-cognitive Correlatives of Creativity among the Secondary School Students."

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26. McClland, D.C. The Calculated Risk; An Aspect of Scientific Performance<sup>nce</sup> In Taylor, C.W. and Barron, F.(eds.) Scientific Creativity Its Recognition and Development. New york; Wiley, 1963.
27. Mehdi, B. Socio-Psychological Factors in Creativity Among School Children. ICSSR Research Abstracts Quarterly, vol. VIII, Jan - March, New Delhi, 1979.

### Objectives of the Study

The study was designed primarily to redise the following objectives:

1. To compare the persondity characteristics of the high creative and the low crative secondary schod students.
2. To find the sex differences in persondity characteristics of the high creative students.
3. To examine the locale differences in persondity characteristics of the high creative boys and girls of the secondary schods in Mizoram.
4. To make suggestions for improving the educational practices in enhancing creative thinking abilities among the secondary schod students.

### Hypotheses Formulated

Statistical verification of the following hypotheses was undertaken:

1. There is no significant difference between the high creative and the low creative students with regard to persondity characteristics: Reserved - Outgoing.
2. There is no significant difference between the high creative and the low creative students with regard to persondity characteristics: Less intelligent - More intelligent.
3. There is no significant difference between the high creative and the low creative students with regard to persondity characteristics: Affected by feelings - Emotiondly stable.

4. There is no significant difference between the high creative and the low creative students with regards to personality characteristics: Phlegmatic - Excitable.
5. There is no significant difference between the high creative and the low creative students with regards to personality characteristics: Obedient - Assertive
6. There is no significant difference between the high creative and the low creative students with regard to personality characteristics: Sober - Happy-go-lucky
7. There is no significant difference between the high creative and the low creative student; with regard to personality characteristics: Expedient - Conscientious.
8. There is no significant difference between the high creative and the low creative student; with regard to personality characteristic: Shy - Venturesome.
9. There is no significant difference between the high creative and the low creative students with regard to personality characteristic: Toughminded - Tenderminded.
10. There is no significant difference between the high creative and the low creative students with regard to personality characteristic: Vigorous - Doubting.
11. There is no significant difference between the high creative and the low creative students with regard to personality characteristic: Placid - Apprehensive.

12. There is no significant difference between the high creative and the low creative students with regard to the personality characteristics: Group-dependent - Self-sufficient.
13. There is no significant difference between the high creative and the low creative students with regard to the personality characteristics: Undisciplined - Controlled.
14. There is no significant difference between the high creative and the low creative students with regard to personality characteristic: Relaxed - Tense.
15. There is no significant sex difference in personality correlates of the high creative students.
16. There is no significant difference in the personality correlates of the high creative boys and girls coming from rural and urban areas.

### Design of the Study

The sample of the study consisted of 700 pupils (335 boys and 365 girls) selected randomly from Classes IX and X drawn from ten secondary schools in Mizoram.

The tools employed to gather the data included :

- (i) Cattell's (1973)<sup>28</sup> 14 High School Personality Questionnaire (HSPQ), and
- (ii) 'Creativity Test' developed by the investigator especially for the study.

28. Cattell, R.B. Handbook of Jr.-Sr. High School Personality Questionnaire (HSPQ). Institute of Personality and Ability Testing: Illinois, 1973.

The 'Creativity Test' is a test battery developed on the line of Guilford Divergent Production Test (1967)<sup>29</sup> and Torrance Tests of Creative Thinking (1966)<sup>30</sup> and consists of five verbal tests : (i) seeing problems test; (ii) unusual uses test; (iii) consequences test; (iv) making things interesting and useful; and (v) similarities test. It also consists of three non-verbal tests; (i) picture construction; (ii) picture completion; and (iii) circles test. The coefficient of correlation for test-retest reliability on a sample of 100 students after an interval of 15 days was .802 for the whole test; .819 for the verbal and .725 for the non-verbal tests, significant at .01 level. The test was validated by comparing it with scores on HSPQ on calculated dimensions (Cattell, 1973)<sup>31</sup> which yielded a statistically significant correlation coefficient of .703. The test was also validated against teacher rating for the total creativity score (N=100), the correlation coefficient being .532 significant at .01 level.

The scores on the 'Creativity Test' were taken as criterion for classifying the pupils into high creative and low creative groups, the highest twenty percent constituting the 'high creative group' (N=140), and lowest twenty percent the 'low creative group' (N=140).

29. Guilford, J.P. and et al., "A Factor Analysis Study of Creative Thinking II: Administration of Tests, and Analysis of Results' Reports from Psychological Laboratories. No. 8., Los Angeles: University of South California, 1967.
30. Torrance, E.P. Torrance Tests of Creative Thinking: Directions, Manual and Scoring Guide. Princeton, N.J: Personnel Press, 1966.
31. Cattell, R.B. Handbook of Jr.-Sr. High School Personality Questionnaire (HSPQ). Institute of Personality and Ability Testing: Illinois, 1973.

For testing the stated hypotheses, the obtained data were subjected to the 2x2x2 analysis of variance design. The three-way classification of ANOVA was done with respect to creativity, sex, and locale. The factor of creativity was varied in two ways - high creative and low creative groups. This was further treated in two ways, boys and girls on sex, and rural and urban on locale. The 't' test was applied to find out the nature and extent of relationship between the high creative and low creative groups with regard to personality scores and results interpreted accordingly.

### Definition of Terms

1. Creativity: Creativity is taken as a divergent thinking process enabling the pupils for creative outputs (novel and useful) and measured through verbal and non-verbal creativity test on four primary traits, fluency, flexibility, originality and elaboration.
2. Non-cognitive correlates: Non-cognitive correlates designate the personality characteristics influencing creativity among the high school students. The personality characteristics are defined in terms of fourteen personality traits as measured by the Cattell's (1973) 14 High School Personality Questionnaire (HSPQ).

### Organisation of the Report

The research report has been divided into six chapters. The introductory chapter, that is, the present one, outlines the research problem and its need and significance. It also enunciates the important objec-

tives, hypotheses and the design of the study. The conceptual analysis, and the theoretical formulations of creativity in various personality theories are presented in Chapter II. A review of studies conducted in creativity in relation to both non-cognitive and cognitive variables is undertaken in Chapter III. In Chapter IV is given a detailed description of the method of study - the sample, tools, and various techniques employed for analysis of the data. Chapter V presents the analysis and findings, and the concluding chapter gives a brief resume of the study together with the salient findings, their interpretations, educational implications, and suggestions for further research.