

# CHAPTER - V

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### SUMMARY AND CONCLUSION

#### 5.0 INTRODUCTION

This chapter presents a brief summary and a birds eye view of the main features of the study. The suggestions for further studies on related topics have been given.

#### 5.1 IMPORTANCE OF CREATIVITY AND INTEREST

Creativity has been recognized as a powerful force resulting in production of all important works of art, literature and technology. Creativity is thus considered as one of the greatest human asset. Relevance of creativity in school, lies in its relatedness to educational and therapeutic goals and its social importance.

Creativity bug resides in every child. But it isn't there in the classroom. As long as our schools shall remain prison cells for the children, their creative urge would be ossified. A child's creative transaction is nurtured to the extent, he receives reinforcement for it, from the home and the school.

The space age requires much of the creative potential of today's school children.

After the famous address of Guilford in 1950, there have been significant efforts for recognition of creativity in its various dimensions.

Interest plays a very important role in every one's life because it determines what one will do and how well one will do in a particular field.

Thus a person known to be interested in Physics, Chemistry or Biology is likely to be more receptive to things of scientific world than poets or

painters. Therefore if interests are developed, children are bound to master the activity and gain success.

The source of inspiration for the study has been the emphasis being laid on the role of creativity in education of the child and the need for fostering it. It was decided to study creativity with its relation to achievement and interest in science.

Studies of Raina (1986) and Bhawalkar (1992) were taken into consideration.

## **5.2 THE PROBLEM**

The topic for the study was formulated as "Study of Student's Achievement, Interest in Science and Scientific Creativity."

## **5.3 VARIABLES OF THE STUDY**

### **5.3.1 Independent Variables :**

Achievement in science, interest in science, gender.

### **5.3.2 Dependent Variable :**

Scientific creativity.

## **5.4 OBJECTIVES OF THE STUDY :**

The main objectives of the study were :

- I) To study the achievement of students in science.
- II) To study the interest of students in science.
- III) To study scientific creativity of students.
- IV) To study the differences in scientific creativity with respect to gender.

- V) To study the relationship between achievement in science and scientific creativity.
- VI) To study the relationship between interest in science and scientific creativity.
- VII) To study differences if any in the scores of fluency among high and low achievers in science.
- VIII) To study differences if any in the scores of flexibility among high and low achievers in science.
- IX) To study differences if any in the scores of originality among high and low achievers in science.
- X) To study differences if any in the scores of total scientific creativity among high and low achievers in science.
- XI) To study differences if any in the scores of fluency among the students scoring high and low on interest in science.
- XII) To study the differences if any in the scores of flexibility among the students scoring high and low on interest in science.
- XIII) To study differences if any in the scores of originality among the students scoring high and low on interest in science.
- XIV) To study differences if any in the scores of total scientific creativity among the students scoring high and low on interest in science.

## **5.5 HYPOTHESES OF THE STUDY**

- i) There is no significant relationship between achievement in science and scientific creativity.

- ii) There is no significant relationship between interest in science and scientific creativity.
- iii) There are no significant differences in the scores of scientific creativity of boys and girls.
- iv) There are no significant differences in the fluency scores of high and low achievers in science.
- v) There are no significant differences in the flexibility scores of high and low achievers in science.
- vi) There are no significant differences in the originality scores of high and low achievers in science.
- vii) There are no significant differences in the total scientific creativity scores of high and low achievers in science.
- viii) There are significant differences in the fluency scores of students scoring high and low on interest in science.
- ix) There are significant differences in the flexibility scores of students scoring high and low on interest in science.
- x) There are significant differences in the originality scores of students scoring high and low on interest in science.
- xi) There are significant differences in the total scientific creativity scores of students scoring high and low on interest in science.

#### **5.6 SAMPLE OF THE STUDY:**

For studying achievement in science, interest in science and scientific creativity a sample of 40 students from Demonstration Multipurpose school, Bhopal were selected.

## **5.7 TOOLS USED FOR THE STUDY :**

5.7.1 Adolescent Interest Test.

5.7.2 Achievement in Science.

5.7.3 Verbal Test of Scientific Creativity.

## **5.8 STATISTICAL TECHNIQUES USED :**

- 1) Coefficient of correlation, r.
- 2) t-value for mean differences.

## **5.9 DELIMITATIONS OF THE STUDY:**

- 1) The study was confined to students of Demonstrations Multipurpose school only.
- 2) The study was conducted only on VIII th class students.
- 3) The study was conducted only on 40 students.

## **5.10 FINDINGS OF THE STUDY :**

- 1) The co-efficient of correlation of achievement in science and scientific creativity was found to be 0.43, which is significant at 0.05 level. Thus there is significant relationship between achievement in science and scientific creativity. The findings of the study were found similar to the results arrived at by Raina (1986) : psycho – Social Correlates of Scientific Creativity Among High School Students. His results concluded that achievement in science was significantly related with scientific creativity. The results of the present study are also in

accordance with Bhawalkar's study – Prediction of Scientific Creativity Through Cognitive and Affective Variables Among High School Students.

- 2) The co – efficient of correlation of interest in science and scientific creativity was found to be 0.12, which is not significant at 0.05 level. Thus there is no significant relationship between interest in science and scientific creativity. The investigator did not come across any study related to interest in science and scientific creativity. Further investigations are needed.
- 3) The t – value for mean scores of boys and girls on scientific creativity was found to be 0.39, which is not significant at 0.05 level. Thus there are no significant differences in the mean scores of boys and girls on scientific creativity. The results go with findings of Raina (1986) : Psycho – Social Correlates of Scientific Creativity Among high School Student. Boys and girls do not differ on scores of scientific creativity because they are provided with same instructional material and same school environment.
- 4) The t – value for mean scores on fluency of high and low achievers in science was found to be 1.13 which is not significant at 0.05 level. Thus there are no significant differences in the mean scores on fluency of high and low achievers in science. The investigator did come across any study related to differences in fluency scores of high and low achievers in science. Further investigations are needed.
- 5) The t – value for mean scores on flexibility of high and low achievers in science was found to be 0.68 which is not significant at 0.05 level.

Thus there are no significant differences in the mean scores on flexibility of high and low achievers in science. The investigator did not come across any study related to differences in flexibility scores of high and low achievers in science. Further investigations are needed.

- 6) The t – value for mean scores on originality of high and low achievers in science was found to be 0.35 which is not significant at 0.05 level. Thus there are no significant differences in the mean scores on originality of high and low achievers in science. The investigator did not come across any study related to differences in originality scores of high and low achievers in science. Further investigations are needed.
- 7) The t – value for mean scores on total scientific creativity of high and low achievers in science was found to be 0.61 which is not significant at 0.05 level. Thus there are no significant differences in the mean scores on total scientific creativity of high and low achievers in science. The result of the study are not in accordance with Raina's (1986) study- Psycho Social Correlates of Scientific Creativity Among High School Students. His result was – The mean scientific creativity of high achievers in science is more than that of middle and low achievers. Further, the middle achievers were more creative than low achievers in science. Further investigations are needed.
- 8) The t – value for mean scores on fluency of students scoring high and low on interest in science was found to be 0.44, which is not significant at 0.05 level. Thus there are significant differences in the fluency scores of students scoring high and low on interest in science. It was assumed that students interested in science will give more number of



responses because of better understanding of concepts of science and therefore score high on fluency. The results were found to be in accordance with the assumption made.

- 9) The  $t$  – value for mean scores on flexibility of students scoring high and low on interest in science was found to be 1.82, which is significant at 0.05 level. Thus there are no significant differences in the flexibility scores of students scoring high and low on interest in science. But it was assumed that students having high interest in science will give varied and unique responses because they have more knowledge and understanding of the concepts of science. The results were found not to be in accordance with the assumptions made. Students scoring high on interest should have scored high on flexibility. Further investigations are needed.
- 10) The  $t$  - value for mean scores on originality of students scoring high and low on interest in science was found to be 1.62, which is not significant at 0.05 level. Thus there are no significant differences in the originality scores of students scoring high and low on interest in science. It was assumed that students interested in science will give more unusual, new and novel responses and score high on originality. The results were found to be in accordance with the assumption made.
- 11) The  $t$  – value for mean scores on total scientific creativity of students scoring high and low on interest was found to be 1.09, which is not significant at 0.05 level. Thus there are no significant differences in total scientific creativity scores of students scoring high and low on interest in science. It was assumed that students having interest in

science will show high scientific creativity because interest result in more readability, in-depth knowledge, better understanding of the concepts of science. The results were found to be in accordance with the assumptions made.

#### **5.11 EDUCATIONAL IMPLICATIONS :**

Creative individuals differ from the non creative in their quest for the mysterious, the unknown and unexplained. The creative traits take time to emerge, need encouragement and guidance for their nourishment. The implications of the study seem to be the following –

- 1) Teachers will come to know about students interest in science and scientific creativity and accordingly should allow him or her to develop along the lines of his or her prevailing interests, with encouragement for his or her creative acts.
- 2) Scientific creativity should be fostered so that academic achievement of students may be increased as a result of which scientific attitude can be developed which will help him to acquire the skill of finding systematic solutions of day to day problems.
- 3) After knowing the scientific creativity, interest and academic achievement of students in science, these should be taken into consideration while conducting various activities in the classroom.
- 4) Teachers must help the creative individual to understand his divergence and make efforts to get his creative talent recognized and rewarded.

- 5) Educational environment should encourage individual initiative, open mindedness, unique, unusual and new ideas, mental flexibility and imaginativeness.

#### **5.12 SUGGESTIONS FOR FURTHER STUDY.**

The present study has been conducted in limited area of Demonstration Multipurpose school on the sample of students limited to it. Study may be taken on this line for a larger sample covering subjects from a large area to obtain greater reliability of results.

The differences in terms of performance on selected variables may also be studied between Schedule Caste and Schedule Tribe students.

Similar studies may be taken with rural and urban populations.

Studies related to interest in science and scientific creativity needs more investigation.

Creativity in other subjects can also be assessed with respect to variables like personality, age etc.