CHAPTER V
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SUMMARY AND CONCLUSIONS

The present study attempted to investigate the scholastic achievement of pupils in relation to their cognitive abilities. It aimed at relating the achievement of pupils in school subjects to creativity and intelligence.

The associative conception of the creative process formulated by Mednick (1962) and elaborated by Wallach and Kogan (1965), and Raven's (1960) view of intelligence were adopted for the present purpose.

For assessing scholastic achievement, achievement tests were specially constructed for the curricular subjects of English, Mathematics and Science of Standard IX. The achievement tests were finalised through item-analysis which was carried out for the data of 207 boys of the IX Standard on whom it was initially administered.

The main study was carried out with 288 boys of
the IX Standard, drawn from four high schools of comparable standard and middle socio-economic level in the city of Madras.

A short scale of the Wallach-Kogan Battery of Creativity Instruments (1965), as adapted by Paramesh (1971) for Indian conditions, was employed for the measure of creativity. Scoring was done for fluency only, in line with the work of Pankove and Kogan (1958). The creativity instruments were found to possess adequate reliability, as determined by the split-half (odd-even) technique and by item-sum correlations.

For the determination of intelligence, the Raven's Standard Progressive Matrices (1960) was employed. Scoring was done in accordance with the Standard Key and directions in the Guide to the test. The intelligence measure was found to possess adequate reliability, as determined by the split-half (odd-even) technique.

Two measures of scholastic achievements were
obtained. They were:

1. The marks in the Half-yearly Examination in school in English, Mathematics and Science.

2. The Scores on English, Mathematics and Science Achievement Tests, developed by the investigator.

The achievement tests were found to possess adequate reliability as determined by the split-half (odd-even) technique.

To determine the effects of creativity, intelligence, and achievement as assessed by Test Scores in English, Mathematics and Science, a 2 x 2 x 2 factorial arrangement was adopted. The median scores were employed for classifying the high and the low groups. The dependent variable was achievement as measured by marks in the school examination.

A 2 x 2 analysis of variance was employed to determine the effects of creativity and intelligence on the dependent variable of achievement, as measured by performance on the achievement tests.
To determine the effects of creativity and intelligence on Total Achievement Index (derived by pooling the marks and the test scores separately) and also to examine the relative difficulty of the three subjects, $2 \times 2 \times 3$ factorial arrangements were employed.

The following conclusions were derived from the results of the present study:

Creativity and Marks

1. Creativity has no effect on the school examinations marks in English and in Mathematics; however, it has a negative effect on Science marks in that the low creatives are significantly better than the high creatives on this measure.

2. Creativity has no effect on Total Achievement Index (Marks); but there is a non-significant trend for the low creatives to obtain better marks than their high counterparts.
Intelligence and Marks

3. Intelligence has no effect on the school examination marks in English; however, it has a positive effect on marks in Mathematics and in Science in that the high intelligence group is significantly better than its low counterpart on both these measures.

4. Intelligence has a positive effect on Total Achievement Index (Marks) in that the high intelligence group is significantly better than its low counterpart on this measure.

Achievement Tests and Marks

5. The English Achievement Test Score has no effect on school examination marks in English.

6. The Mathematics Achievement Test Score has a positive effect on examination marks in Mathematics; the high achieving group on Mathematics is significantly better than its low achieving counterpart on this measure.

7. The Science Achievement Test Score has a positive
effect on examination marks in Science; the high achieving group on Science is significantly better than its low achieving counterpart on this measure.

Difficulty of Subjects based on Marks

8. The three school subjects of English, Mathematics and Science differ significantly from each other in terms of school examination marks of pupils in them; Mathematics is relatively the most difficult subject and English the easiest with Science being of intermediate difficulty.

Interaction effects on Marks

9. No significant interaction effects of Creativity, Intelligence and English Achievement Test Score could be discerned on the English Marks.

10. No significant interaction effects of Creativity, Intelligence and Mathematics Achievement Test Score are found on the Mathematics Marks.

11. No significant interaction effects of Creativity, Intelligence and Science Achievement Test Score are found on the Science Marks.
12. No significant interaction effects of Creativity Intelligence and the curricular subjects could be discerned on the Total Achievement Index (Marks).

Creativity and Performance on Achievement Tests

13. Creativity has a negative effect on performance on English, Mathematics and Science Achievement Tests in that the low creatives are significantly better than their high counterparts on these measures.

14. Creativity has a negative effect on the Total Achievement Index (Test Scores) in that the low creatives are significantly better on this measure than their high counterparts.

Intelligence and Performance on Achievement Tests

15. Intelligence has a positive effect in Scores on English, Mathematics and Science Achievement Tests in that the high intelligence group is significantly better than its low counterpart on these measures.

16. Intelligence has a positive effect on the Total Achievement Index (Test Score) in that the high
intelligence group is significantly better than its low counterpart on this measure.

Difficulty of Subjects based on Achievement Tests

17. The three school subjects of English, Mathematics and Science differ significantly from each other in terms of pupils' scores on achievement tests in them. Mathematics is relatively the most difficult subject and English the easiest with Science being of intermediate difficulty.

Interaction effects on Achievement Test Performance

18. No interaction effect of Creativity and Intelligence could be discerned on performance on English, Mathematics and Science Achievement Tests.

19. No significant interaction effects of Creativity, Intelligence, and School subjects could be discerned on the Total Achievement Index (Test Scores).