CHAPTER VII

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The present study entitled, "To Compare the Effects of Individualized and Conventional Instructions on Students Achievement in Relation to Personality Types, Intelligence and Levels of Thinking" was conducted with a view to study the effectiveness individualized instructions particularly personalized system of instructions and programmed instructions in terms of achievement in the subject of Mathematics with intelligence, personality type and levels of thinking as correlates of academic achievement.

7.1 OBJECTIVES OF THE STUDY:

The study was advanced to answer the following research queries:

(1) To see whether individualized modes of instructions are more successful in terms of academic achievement than group modes or not.
(2) To see whether there is any interaction between modes of instructions and levels of intelligence.

(3) To see whether introverts and extroverts differ in mathematical achievement with respect to different modes of instructions or not.

(4) To know if content comprehension (thinking) levels of students affect achievement in Mathematics significantly or not.

7.2 HYPOTHESES:

The study was advanced on the basis of hypotheses given below:

(1) There is significant difference in terms of mean achievement scores of three groups taught through three different instructional strategies.

(a) The mean achievement scores of the students exposed to personalized system of instructions will be significantly higher than those exposed to conventional instructions.

(b) The mean achievement scores of the students exposed to individualized system of instructions will be significantly higher than those exposed to programmed text in branching style.
(c) The mean achievement scores of the students exposed to conventional instructions will be significantly higher than those exposed to programmed text in Crowderian style.

(2) Ability level of the students will not significantly vary the overall achievement of the student irrespective of the modes of instruction, personality types and levels of comprehension.

(3) Personality types will not significantly affect achievement irrespective of modes of instruction, intelligence level and operative comprehension level.

(4) Levels of thinking of students will not affect achievement ignoring intelligence, instructional mode and personality type.

First Order Interaction Hypothesis:

(5) (a) The interaction effect of level of intelligence x instructional mode on student achievement will not be significant.

(b) The interaction effect of operative comprehension thinking by instructional mode will not be significant.

(c) The interaction effect of personality types by instructional mode will not be significant.

(d) Levels of personality x levels of operative comprehension on achievement will not be significant.
(e) Levels of comprehension x levels of intelligence on the achievement of the students will not be significant.

(f) Personality types x levels of intelligence on student achievement will not be significant.

Second Order Interaction Hypothesis:

(6) (a) The interaction effect of instructional mode x personality type x intelligence level on the achievement of the student will not be significant.

(b) The interaction effect involving instructional mode by levels of intelligence by operative comprehension thinking levels on the achievement will not be significant.

(c) The interaction effect involving teaching strategies by personality types by levels of content comprehension on the achievement of the students will not be significant.

(d) The interaction effect involving personality types x levels of intelligence x levels of operative comprehension thinking on the student achievement will not be significant.

Third Order Interaction Hypothesis:

(7) The interaction effect involving the variables of instructional mode x intelligence level x personality
type x operative comprehension level will be significant.

7.3 SAMPLING OF THE STUDY:

For the collection of data to test the hypotheses of the study, a sample of 180 students was raised randomly from IXth Class students enrolled in Government and Privately managed schools of Jammu City. Average age of the sample was 15.2 years.

7.4 PROCEDURE AND EXPERIMENTAL DESIGN:

Individualized modes of instructions chosen for the present study were learning packages and branching programmed learning material and lecture mode was chosen as a conventional mode of instructions. So variable mode of instructions formed the treatment variable. Intelligence level, personality type and level of content comprehension were other independent variables chosen as potential variables which may affect the dependent variable of achievement in the subject of mathematics. The design for the present study was pre-test - post-test cross control group experimental design. The sample was divided into three groups and to each group a mode of instructions was assigned randomly and data were collected.
7.5 **DATA COLLECTION** :

In this study following tools were used to collect data:

- Group test of General Mental Ability (Hindi Version) revised by Dr. S. Jalota (1972).

- Eysenck's Maudsley Personality Inventory (M.P.I.), (Hindi Version) by S. S. Jalota and S. D. Kapoor.

- Content Comprehension developed and standardized by Dr. G. S. Sodhi and Tejinder Mohani (1982), Panjab University, Chandigarh (India).

- Achievement Test developed and standardized by Dr. G. S. Sodhi and Mrs. Madhu Chitkara (1985), Panjab University, Chandigarh (India).

- Branching Programme locally developed.

- Learning Package locally developed.

Using abovementioned tools, the following data were collected:

- Intelligence Scores.

- Personality Scores.

- Content Comprehension Scores.

- Achievement Scores.
7.6 **ANALYSIS OF DATA**:

The data were analysed using descriptive statistics such as mean, median, standard deviation, skewness and kurtosis. To test the hypotheses, analysis of variance (3 x 2 x 2 x 2) measures was employed. In order to test the significant of differences between means, t-ratios were calculated.

7.7 **CONCLUSIONS**:

1. Learning Packages was found to be most effective mode of instructions out of the three modes studied in the present problem, in terms of mathematics achievement.

2. Programmed material in the branching style was found to be least effective of the three modes because the mean achievement scores of other two groups were found to be significantly higher than the group exposed to scrambled book.

3. High ability students scored higher than low ability students irrespective of mode of instruction.

4. Levels of thinking (content comprehension) and personality types acted as a redundant factor so far as achievement in Mathematics was concerned.

5. Extroverts and introverts did not differ on achievement in Mathematics when taught through either individualized strategies or through lecture strategy.
6. Levels of intelligence did not interact significantly with modes of instructions to produce differential achievement.

7. Interaction between levels of thinking (content comprehension) and modes of instructions was also found to be insignificant. High level students did not differ significantly from students possessing low level of thinking in terms of mathematics achievement.

8. Levels of personality did not interact significantly with modes of instruction to produce differential achievement in Mathematics at high school level.

9. Intelligence levels did not interact significantly with thinking levels to produce differential achievement in Mathematics.

10. Interaction between levels of intelligence and types of personality was found to be insignificant. Intelligence levels and personality types interaction is a redundant factor so far as the achievement in Mathematics was concerned.

11. Levels of comprehension did not interact significantly with personality types to produce differential achievement in Mathematics at high school level.
12. The three variables namely, instructional mode, intelligence level and personality type did not interact significantly to produce differential achievement.

13. The variables of instructional mode, thinking level and personality type did not interact significantly to produce differential achievement.

14. Interaction between levels of intelligence, levels of comprehension (thinking) and types of personality was found to be insignificant. The achievement of the students is not affected statistically by crossing levels of thinking x levels of intelligence x types of personality.

15. The interaction effect of instructional mode x level of intelligence x level of thinking was found to be significant. The achievement of the students will be affected by crossing levels of thinking, levels of intelligence and modes of instruction.

16. The interaction effect involving the variables of instructional mode, intelligence level, personality type and operative comprehension level was insignificant proving that the achievement of the students will not vary by crossing levels of these variables.
7.8 IMPLICATIONS AND APPLICATIONS OF THE PRESENT STUDY:

The findings of the present study have some very important implications for improving the quality of instructions in the subject of Mathematics at high school stage which may be summarised as below:

Learning Package was found to be superior to conventional method of instructions, and also to the branching programme. The Mathematics teachers must introduce the learning package in the lesson. Lecture Method was found to be better than branching programme which imply that the branching programme is not suitable in imparting instructions in Mathematics at high school level.

High Intelligence students were found to be having more achievement scores in Mathematics than low intelligence students irrespective of mode of instructions, levels of thinking and types of personality. The Mathematics teachers must keep the level of intelligence in view while imparting instructions in Mathematics.

Level of Thinking and personality type were found to be redundant factor for achievement in Mathematics at high school stage. The Mathematics teacher may neglect the level of thinking and personality type of the students in his/her lesson.
Before introducing the learning package in schools, the teachers must be trained properly to utilize the package. For this purpose applications of modern educational technology should be stressed upon. A well-equipped library should be available in the school.

The technique of personalized instructions is costly so this aspect should also be kept in view while planning for teaching through individualized instructions. More studies should be conducted by considering other variable combinations before taking final decision for introduction of individualized instructions as mode of instructions in Mathematics for high school classes.

7.9 SUGGESTIONS FOR FURTHER STUDIES:

1. The present study may be conducted in other subjects at high school level.
2. The present study can be conducted by involving more topics or the entire course of Mathematics at ninth class of high school.
3. Studies may be conducted by involving more variables like sex, socio-economic status, philosophy of a nation, rural/urban effect, age etc.
4. Study may be replicated in other subjects of other classes at high school level.
5. The present study may be conducted at college level or university level in different subjects.