A Comparative Study of Effectiveness of Programmed Instruction and Traditional Method in Teaching Biology.

1. Objectives:
   - To develop and validate a linear programme on the concept ‘Classification of Vitamin’ in the subject of Biological Science.
   - To develop and standardize three achievement tests in Biological Science on the topic of ‘Classification of Vitamin’ selected for three Delayed Intervals (Next Day, After 15 Days, After 30 Days).
   - To investigate the related effectiveness of instructions through Programmed Instruction and through Traditional Methods of High and Low Intelligent students at three Delayed Intervals (Next Day, After 15 Days, After 30 Days) for High Socio-Economic Status students.
   - To investigate the related effectiveness of instructions through Programmed Instruction and through Traditional Methods of High and Low Intelligent students at three Delayed Intervals (Next Day, After 15 Days, After 30 Days) for Low Socio-Economic Status students.
   - To study the effect of Intelligence (High & Low) Socio-Economic Status (High & Low), Teaching Method (PI & Traditional Method) and Delayed Intervals (Next Day, After 15 Days, After 30 Days) on scholastic achievement scores in Biology.

   The Intelligence, Socio-Economic Status, Teaching Methods, Delayed Intervals are independent variables and scholastic achievement scores are dependent variable or criterion variable for the study.

   The researcher selected two standardized tools namely S. Jalota’s Group Test of General Mental Ability – 72, and R.L. Bharadwaj’s Socio-Economic Status (S.E.S.). Apart from it, the researcher prepared one Linear Programming in Biology on “Classification of Vitamin” as well as three Achievement Tests of equal difficulty level. A sample of 240 students have been taken for data collection.

   In the present study two levels of Intelligence, two levels of S.E.S., two Teaching Methods and three Delayed Intervals were the variables used for the study, thus we have used 2x2x2x3 mixed factorial design with repeated measures on last variable i.e. Delayed Intervals.

3. CONCLUSIONS:
   - The main objective of the present study was to study the effectiveness of instructional use of Programmed Instruction in schools and for this purpose it was essential to compare the Programmed Instruction with the Traditional Instructions in terms of the scholastic achievements. The study also aimed at the effectiveness of P.I. Method of Instruction on the retention of the contents taught as against the Traditional Method of Instruction. The following conclusions are drawn from the present study-

   1. High S.E.S. students taught by Programmed Instruction Method achieve higher mean scores in Biology as compared to students taught by Traditional Method. This trend was found for all levels of Intelligence and Delayed Intervals.

   2. Low S.E.S. students taught by Programmed Instruction Method achieve higher mean scores in Biology as compared to students taught by Traditional Method. This trend was found for all levels of Intelligence and Delayed Intervals.

   3. The instructional use of Programmed Learning Material in schools is significantly related to the scholastic achievement in the positive direction. A student who is taught through Programmed Instruction is likely to have higher academic achievement than the one who is taught through the traditional question-answer method.
4. Teaching through Programmed Instruction makes a significant difference as again the Traditional Teaching in the scholastic achievement of High and Low S.E.S. students. More specifically High and Low S.E.S. students are more likely to have higher scholastic achievement when taught through Programmed Instruction than their counterparts of the same level of S.E.S. taught through Traditional Method.

Following conclusions are also drawn for the interactional effect of Teaching Methods and Socio-Economic Status on scholastic achievement-

b. High S.E.S. students with Programmed Instruction Method of teaching are most likely to have the highest academic achievement and the Low S.E.S. with the Traditional Method may have the least.

c. The Traditional Method of teaching for High S.E.S. students may however prove more effective than the Programmed Instruction Method of teaching for Low S.E.S. students.

5. The students who are taught through Programmed Instruction may retain the contents for a longer duration than those taught by the Traditional Method. In other words Programmed Instruction may be more effective than the Traditional Method of Instruction in increasing retention. The scholastic achievement scores in achievement tests at different time intervals are likely to be higher in Programmed Instructions than in the Traditional Method of Instructions.

1. An instruction through Programmed Instruction Method is significantly related with the scholastic achievement of High and Low intelligence students against the Traditional Method of teaching. High Intelligence students with P.I. achieve highest academic achievement and Low Intelligence students with Traditional Method achieve least.

2. The scholastic achievement scores at different Delayed Intervals were found to be significantly related to Methods of Teaching. The following conclusions can, therefore, be drawn about the retention on the basis of Teaching Methods.

a. The students are likely to demonstrate maximum retention of the content, when instructions are given through Programmed Learning Material.

b. The students might exhibit the least retention of the content, when taught through the Traditional Method.

c. The retention rate may decrease steadily from next day to last 4th week in both the groups of Teaching Methods separately.

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