



A Study of the Effectiveness of Linear Programmed self-Learning Material Method on the Achievement of the Students of Grade-9 in Mathematics

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ABSTRACT

To keep in mind this effect, the investigator had decided to assess oneself learning method, i.e. Linear Programmed Learning Material. To develop the Linear programmed self-Learning material for teaching Mathematics subject. To take opinions of students regarding the programmed "Linear Programmed self Learning Method. There is no significant difference between the mean scores of pre-test and post-test of the students of controlled group with reference to Educational progress of students in subject of Mathematics. Students may develop the concept of self-learning, self-dependent and self-confidence. Only Gujarati medium schools of Surat city were the population for the present investigation. Frame sheets for Linear Programmed self-learning material. To give proper direction to the investigation Data Collection is necessary. In the present investigation. vashishth Vidhyalaya, Surat had been selected for data collection. t-test had been performed for testing hypotheses in the present investigation.. We can say that traditional method had been affected to the student's of controlled group. Experimental method (Linear Programmed self-Learning material) has been affected to the students of Experimental group. By Linear Programmed self-Learning material method, we can be increased the interest and activeness of the students for the subject. The present Research, on Grade-9 the subject of Mathematics is based on the unit of Geometry

with the help of Linear Programmed self-Learning material Method, the units of the subject of the Mathematics. We can be observed the effectiveness by taking practical work.

Introduction

Teacher Centered learning method in the classroom is one of the part of our Educational system from the ancient time. Lecture method is used for completing limited syllabus in limited time. But, in this situation, students become passive listeners. Moreover, in country like India, numbers of schools increase day by day due to increasing Educational space with change in social needs. It is quite difficult for teachers to reach to every student. In our country, we find 30 to 70 numbers of students in the classroom. One can not match with individual differences because of large number of students in one classroom. Generally, in our classroom, average students are mostly focused and that's way, some students are left behind in the Education. And reason of it, the negative thinking regarding particular subject is raised in the mind of the students. If we provide proper time, guidance and some reference materials to the slow learners and fast learners, they can learn better in their study.

In today's time, it is expected that students themselves involve in the learning situation. That's way, to cape up with the changing situation and to keep in mind the psychological principles, one should develop self learning methods for reading to the need of every student in the classroom.

Today, it is necessary to make teaching learning affective, the use of team teaching, assignment method, project method, supervised study method, Programmed Learning Method should be increased.

With keeping in mind, student capability, self-learning methods are developed in the field of Education and technology. Among all self-learning methods, some are more effective and some are less effective. Apart from this, when student learn Themselves, the interaction between teacher and students is less. When knowledgeable teacher include his own skills with the students to make learning process more active and effective, students get more progress in the particular subject. That's why, if we want to develop self-learning method in the absence of teacher; we have to keep in mind the students' activeness and readiness for learning.

To keep in mind this effect, the investigator had decided to assess one self-learning method, i.e. Linear Programmed Learning Material.

Statement of the Problem

A Study of the Effectiveness of Linear Programmed self-Learning Material Method on the Achievement of the Students of Grade-9 in Mathematics

Research Objectives

Investigator had decided following objectives for present investigation:

General Objectives

- (1) To develop the Linear programmed self-Learning material for teaching Mathematics subject.**
- (2) To develop teacher centered test on unit.**
- (3) To gain opinions regarding the programmed of Linear Programmed self-Learning Method.**

Specific Objectives

- (1) To compare the mean scores of pre-test and post-test of the students of controlled group with reference to educational progress of students in subject of Mathematics.**
- (2) To compare the mean scores of pre-test and post-test of students of Experimental group with reference to educational progress in subject of Mathematics.**
- (3) To compare the mean scores of pre-test of the students of controlled group and Experimental group with reference to Educational progress of students in subject of Mathematics.**
- (4) To compare the mean scores of post-test of the students of controlled group and Experimental group with reference to Educational progress of students in subject of Mathematics.**

- (5) **To take opinions of students regarding the programmed “Linear Programmed self-Learning Method”**

Hypotheses of the study

- (1) **There is no significant difference between the mean scores of pre-test and post test of the students of controlled group with reference to Educational progress of students in subject of Mathematics.**
- (2) **There is no significant difference between the mean scores of pre-test and post test of the students of Experimental group with reference to Educational progress of students in subject of Mathematics.**
- (3) **There is no significant difference between the mean scores of pre-test of the students of controlled group and Experimental group with reference to Educational progress of the students in subject of Mathematics.**
- (4) **There is no significant difference between the mean scores of post-test of the students of controlled group and Experimental group with reference to Educational progress of the students in the subject of Mathematics.**
- (5) **There is no significant difference between the opinions of the boy students and girl students of Experimental group regarding the Linear Programmed self Learning Method.**

Importance of the study

- (1) Knowledge can be lifelong gained through Linear Programmed self-Learning Method.
- (2) Students may take part actively in teaching learning situation.
- (3) Students may learn with self paced and self power.
- (4) Students may know the fundamental things of subject through Linear Programmed self-Learning Method.
- (5) The atmosphere may become lively by this type of method.
- (6) Students may develop the concept of self-learning, self-dependent and self-confidence.

Delimitation of the Study

- (1) In this investigation, among all subjects of Grade-9, only Mathematics subject was included.
- (2) In this investigation, among various teaching methods, only Linear Programmed self Learning Method and traditional method were used.
- (3) In this investigation among all units of subject Mathematics of Grade-9, only one unit named “Geometry” Was selected for making programme of Linear Programmed self Learning Method.
- (4) Only Gujarati medium schools of Surat city were the population for the present investigation.

Sample and Population

Population

All students of Grade-9 of Gujarat State who were in Gujarati Medium were the population for the present investigation.

Sample

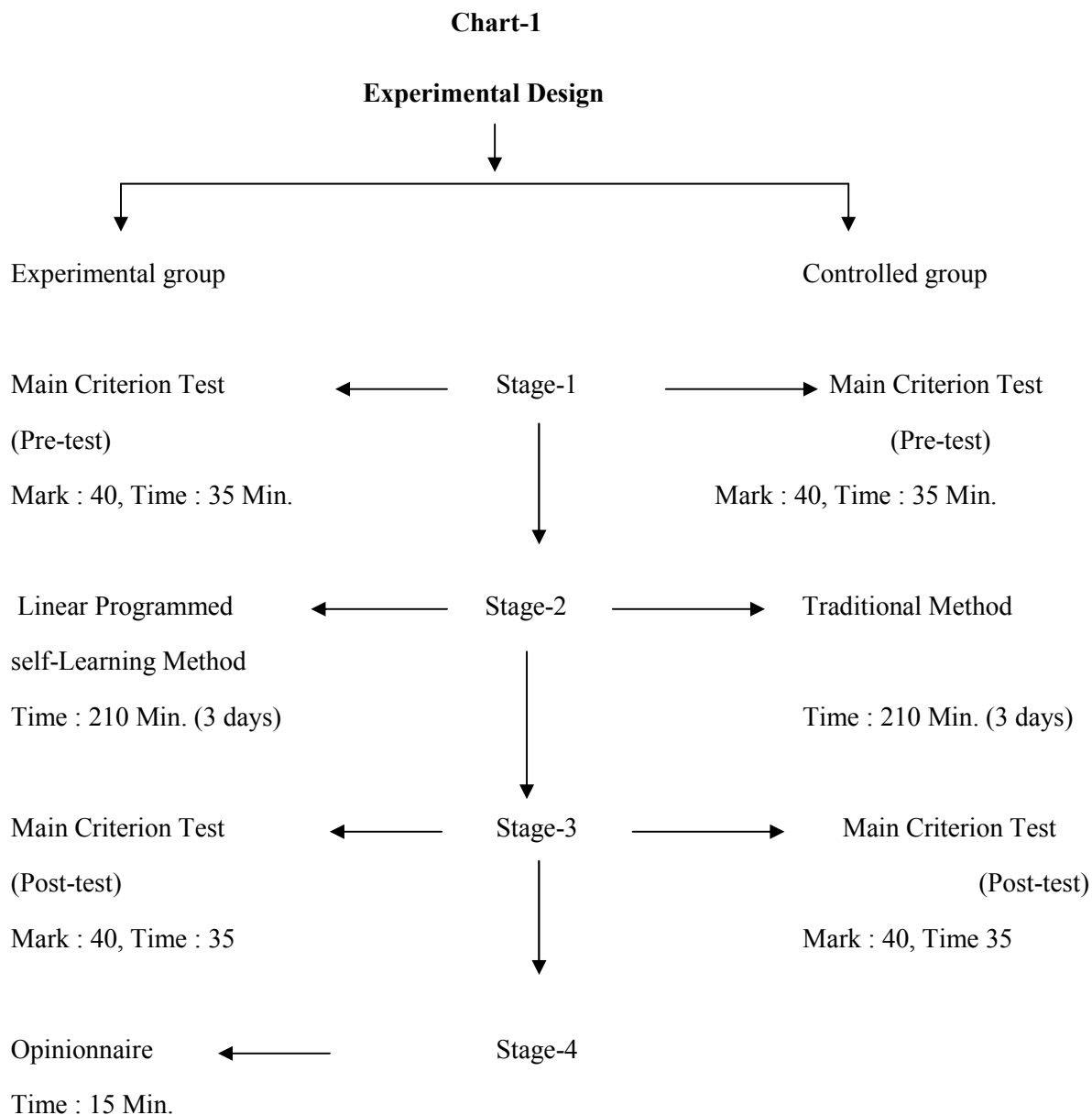
From the population, one school of Surat city was selected for the present study by incidental purposive sampling method.

Research Tools

- (1) Tools for doing experiment:
 - Frame sheets for Linear Programmed self-learning material.
- (2) Tools for data collection:
 - Criterion test
 - Opinionnaire

Experimental Design

In this present and investigation among various design “Pre-test post-test equivalent group design” was selected. That can be shown in below given chart-1.



Data Collection

To give proper direction to the investigation Data Collection is necessary. In the present investigation. Vashishth vidhyalaya, Surat had been selected for data collection. By taking the permission of principal of this school, 80 students of Grade-9 of this school had been distributed in two groups by pair method, in which 40 students were in controlled group and 40 students were in Experimental group had been divided. Data collection and been done by giving Criterion Test and Opinionnaire to each student.

Analysis of data

t-test had been performed for testing hypotheses in the present investigation.

Findings

- (1) Controlled group's student's pre-test and post-test's mean scores were 17.09 and 26.67, and t-value was 10.33. Gain mean score was higher than 0.01 level. That's why, hypothesis no.1 had been rejected.

Thus, we can say that traditional method had been effected to the student's of controlled group.

- (2) Mean scores of students of pre-test and post-test of Experimental group were 15.88 and 28.77 and t-value was 14.32. Gain mean score was higher than 0.01 level. That's why, hypothesis no.2 had been rejected.

Thus, we can say that Experimental method (Linear Programmed self-Learning material) has been effected to the students of Experimental group.

- (3) Mean scores of students of post-test of both controlled group and Experimental group were 22.58 and 27.78 and t-value was 2.73. Gain t-value was higher than 0.01 level. That's why, hypothesis no.3 has been rejected.

Thus, we can say that Linear Programmed self-Learning material method was proved to be more effective than traditional method.

- (4) Mean scores of opinionnaire of girls and boys of Experimental group were 41.48 and 42.42 and t-value was 0.87, which is less than 0.05 level. That's why, hypothesis no.5 has been accepted.

Thus, opinions of girls and boys regarding Linear Programmed self-Learning material method are same. We can not find any difference in opinions between the two.

Educational Implication

The results of this investigation show some Educational implication that are given below:

A Study of the Effectiveness of Linear Programmed self-Learning Material Method...

- (1) By Linear Programmed self-Learning material method, we can be increased the interest and activeness of the students for the subject.
- (2) By this method, we can give the deep knowledge of the content to the students.
- (3) This method satisfies the personal differences. That's why every student can learn with his/her own speed. Those who are slow and dull in learning, they can learn the content of the different subject effectively.
- (4) Students can also use the Linear Programmed self-Learning material method by their own way to increase the gained level.
- (5) Because of the explosion of the number of students in the classroom, it is difficult to focus on each student. Second thing, time-limit for completion of decided syllabus, it is quite difficult to focus properly each student's learning. That's why, development of the Linear Programmed self-Learning material method can be made by Experts, N.C.E.R.T., G.C.E.R.T. and DIET, the effectiveness of Education can be increased.

Suggestion for future Research

Research is one of the never ending process. The present research, started with keep in mind the limited objectives at project level. So, its field is limited researcher believes firmly that to fulfill this limitation, in future in this field, other research will give different new gift of subjects. In this field, the researcher will be giving proper guidance to other researcher, with this objective, the researcher give the following suggestion.

- The present Research, on Grade-9 the subject of Mathematics is based on the unit of Geometry with the help of Linear Programmed self-Learning material Method, the units of the subject of the Mathematics. We can be observed the effectiveness by taking practical work.
- The present research is taken in the subject of Mathematics of Grade-9 So, that Linear Programmed self-Learning material Method can be develop in different subject of Grade-9. So, that we can be observed the effectiveness.
- Linear Programmed self-Learning material Method can be developed on the different subject at primary, secondary and higher secondary level. So, we can be observed the effectiveness.

- The present research includes only the school of Surat city. This type of Linear Programmed self-Learning material Method will be taken to observe the effectiveness in village area and will be taken the comparative study of the effectiveness of Urban School and the village school.
- The present research material is only useful for the Gujarati medium student. So, like this type of material will be made for the students of the medium of Hindi, English and Marathi language and will be observed the effectiveness with the experimental work.
- The present research work is taken on only limited models. To take more models for this type of Linear Programmed self-Learning material Method and will be observed its effectiveness.

In the present research, there is observation of development and effectiveness the Linear Programmed self-Learning material Method. But, the effectiveness of Linear Programmed self-Learning material Method can be compared with other methods like slide programme, Tap-transparency, Team-teaching method, Assignment method, Computerized Programme Self Learning Material.

Conclusion

Thus, the research on the important subject like this, the researcher feels deeply satisfied and if it is proved this research will be helpful for the past researcher, school teachers and management committee and learner will be feel self satisfied.

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