TO STUDY THE EFFECTIVENESS OF USING MASTERY LEARNING MODEL ON ACADEMIC ACHIEVEMENT OF SCIENCE

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Abstract

The purpose of the study was to investigate the effect of Mastery learning model on achievement in science. The sample consisted of 30 students of 6th Std of ICSE board from Ashoka Universal school. Mastery learning model based on the instructional material that was implemented to the experimental group after pretesting. The gain scores were computed after post test for all the students. The findings of the study were

(i)   Better gain scores were obtained by the students taught science through the Mastery learning Model compared to those who were taught through conventional teaching

(ii)   Superior performance on the criterion achievement test showed by the group of students taught science through Mastery Learning Model as compared diagnostic test.

The conclusion of the study was that the Mastery Learning Model plays an important role in improving the achievement of student in science.

Introduction

Millions of children go to school for their education. Millions of rupees are being invested annually in the process. Despite all these efforts in education of children, pupil's achievement must to be desired . Now a days educational system has adopted various new trends & techniques of teaching & learning. Previously the education was faculty centered but now it is learner centered. So, the focus is being shifted from the teacher to the student. In every classroom we find the individual differences among the students / learners. As the students come from different backgrounds we find different behavior pattern among them. We found students with different abilities & different attitude, different interest & different perception power. All these factors affect their academic performance. But this is not the case; every student can achieve High scores or learn if they are provided with the appropriate learning condition and time. So, teacher cannot teach them by using only traditional method of teaching. If the teacher is expecting that the student should get approximate 100% of what she is teaching, then she has to equally take extraordinary

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efforts to make them learn. These extraordinary efforts are nothing but the new teaching styles and the teaching methods that the teacher needs to use in her teaching process.

A teacher should create interest & inner urge to learn them by their own. If a learner takes interest in learning then learning becomes more effective. There are some models of teaching as concept attainment model, Advance Organizer Model, Problem Solving Model **&** Mastery learning model.

Mastery learning model was introduced into the professional literature in the late 1960s (Bloom 1968). Mastery learning strategy is a new approach to student-learning which provides successful and rewarding learning experiences to almost all the students (Okey, 1977) and technology helps to transform education to learner centered and to make instructions better by replacing the "Sage on the stage" with interactive individualized learning possibilities (Kelly & Schorger, 2002). The developers of mastery learning assert that it is most useful with the basics skills and slow learners at both elementary and secondary levels. B.S Bloom is unquestionably considered as the father mastery Learning Strategy for his systematic investigation into the problem of helping each child to achieve mastery of a subject & popularizing it. It is a new instructional strategy, which is used for developing mastery learning & objectives of curriculum can be realized. Bloom challenges the assumption that individual differences in school achievement are inevitable. Mastery Learning is designed to ensure that nearly all students reach the same level of achievements by repetitive applications of the simple formula: plan- teach- test- re teach andretest. Thus, mastery learning is the group-based instructions followed by remedial techniques. School systems that have implemented mastery learning have found it to be a very effective teaching and learning method.

Statement of problem –

To study the effects of Mastery Learning Model on academic achievement of science.

Objectives –

To check the effectiveness of Mastery Learning Model on student's achievement in teaching science.

Operational definition –

1. **Mastery learning model –** Mastery learning model is the systematic & logical approach to make mastery over the subject.

2. **Achievement –** The scores of post test of experimental group.

3. **Science-** Science is one of the major subject.

Need & importance –

Due to the various changes in education field teacher has to change her roles according to the needs of learner & society. Teacher should update her knowledge is important but she should implement that knowledge practically in schools or colleges. Mastery learning strategy of learning is innovative approach & technique which makes learning more lively & interactive. It is more creative than traditional teaching. Does it rarely maker difference on learning of the students? it is main tries to check effectiveness of Mastery learning model on the achievement of the student. If it proves effective strategy for learning then all student will be on the same level more interactive more confident with then other student teachers & really the environment will be more suitable for learning for each & every student.

Research question:

Is there any positive effect of using Mastery Learning Model on academic achievement of student?

Hypothesis – Null hypothesis

1.   There will be no significant difference between the scores of pre test & post test.

2.   There will be no effect of mastery learning model on the learning of the science subject.

Method adopted for the present study –

The researcher used experimental method for their present study.

Chosen sample & method –

Probability sampling method used. The research investigation was carried out on the 30 students of class VI of ICSE board from Ashoka Universal school in Wadala, Nasik.

Experimental design –

In the present study pre-test and post-test design with remedial teaching for the group that was employed.

Tools -The   following   tools   were   used   for   the   purpose   of   data   collection

1.   diagnostic test (designed by the researcher)

2.   Achievement evaluation Test (designed by the researcher

Procedure

The experiment as conducted in two stages:

Stage-1:Selecting the experimental sample The experiment was conducted on 30 students of class VIth of ICSE board from Ashoka Universal school.

Stage-2:Conducting the experiment:

  The experiment was conducted in following steps given below:

  Step-I:Administration of the pre-test.

  Step2:InstructionalTreatment.

 Step -3:Administration of the Post test.

Data Analysis & Interpretation –

        The mean, S.D. and 't' value for measuring difference between the means of the pre-test and post test
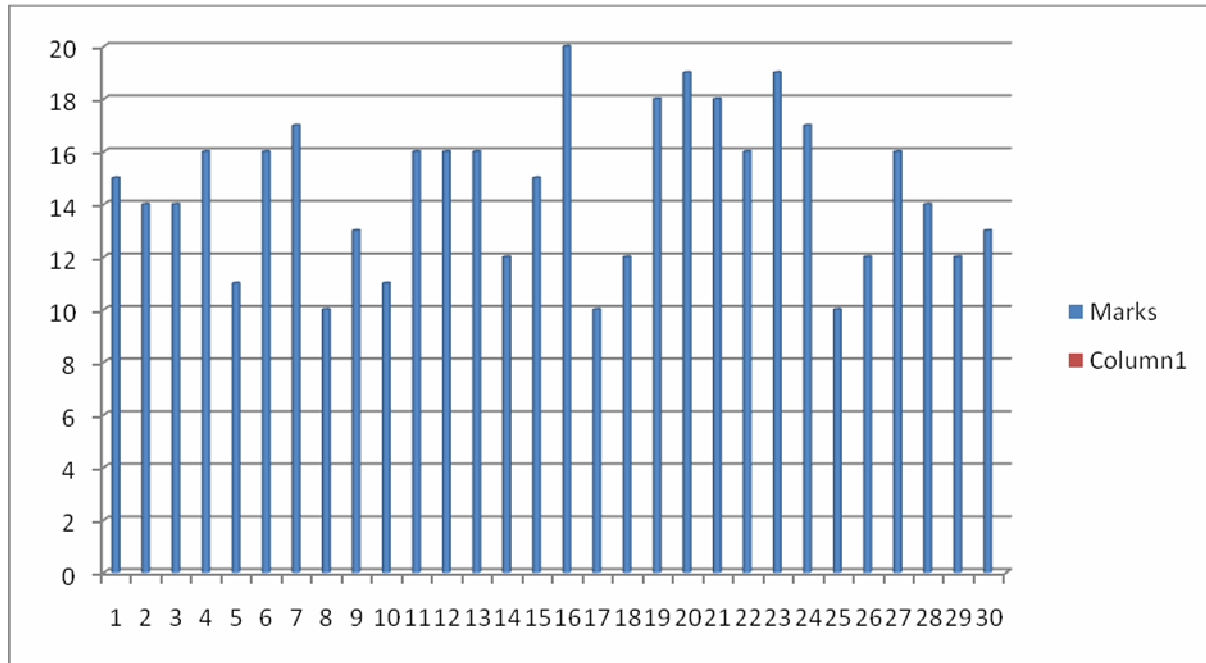
Table-I

Test	No. of student(N)	Mean	Standard deviation (S.D)	't' value	table 't'	Level of significance
diagnostic test(Pre-test)	30	10.93	5.291			
Achievement Test (Post-test)	30	14.6	2.795	.0836	2.04	0.01

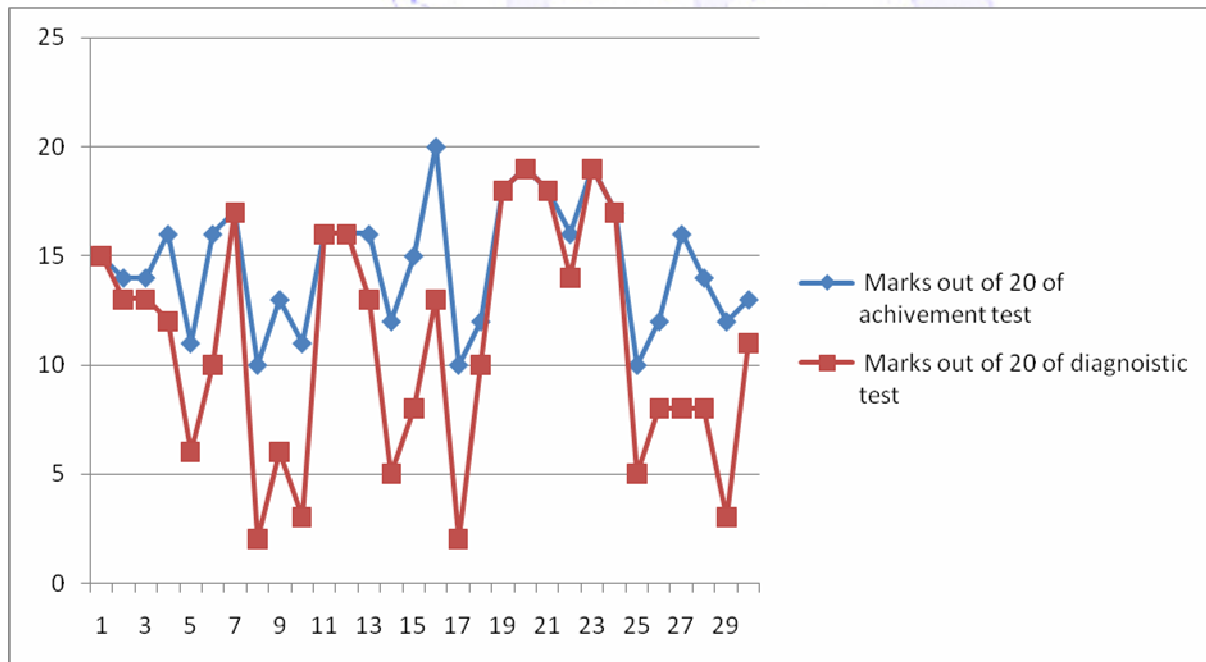**Graph 1 – Scores of diagnostic test**
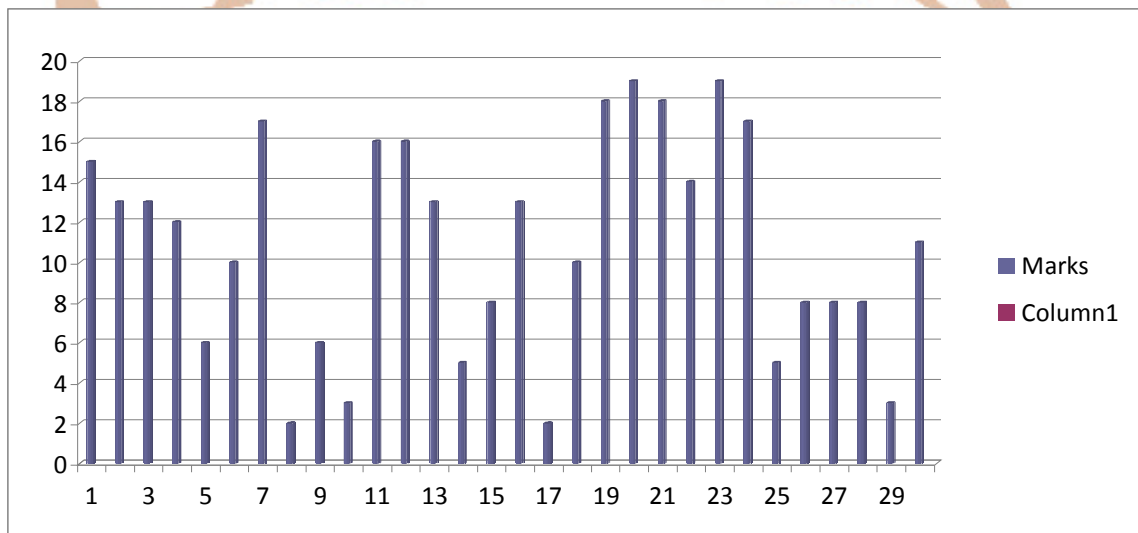
Graph-2 Scores of Achievement Test

Graph 3 – showing difference in the diagnostic and achievement test.

Interpretation –

The above table revels that the't' values was found to be significant at 0.01level. It shows that students of

Mastery Learning Group have scored significantly higher than what they had taught by traditional method i.e. Mastery Learning Model in which student were provided which each session of unit test, feedback and remedial instructions, which shows gradual decrease in errors.

Hence, it may be inferred that the two groups differed significantly and the Experimental group performed much better than control as it shows superior mean gain scores. Hence it may be inferred that Mastery Learning Model plays an important role in improving the achievement of students in science and was found to be superior to conventional teaching for class VI students in a representative school of Ashoka.

With the help of above observation researcher has to reject null hypothesis.

Findings

The findings of the present investigation pertain to students of classVIth of a representative school of Ashoka. Better gain scores were obtained by the students taught science through the Mastery learning Model.

Superior performance on the criterion achievement test was showed by the group of students taught science through Mastery Learning Model as compared to the diagnostic test.

Conclusion

The conclusion is that the Mastery Learning Model plays an important role in improving the achievement of student in science. It was found to be superior and effective method than conventional teaching for class VIth students in Ashoka universal school. The result showed that the degree of effectiveness of Mastery Learning is not positive to that extent in case of students of higher intelligence because they have better grasping power than students with low intelligence. Thus it can be inferred that scope improvement is narrower for intelligent pupils than for less intelligent pupils. From the research discussed above, it is evident that mastery learning is an effective method of instruction which enhances student learning, achievement, attitude, and expectations

Recommendation –

1)   In teacher training college teachers should use Mastery learning model for effective learning.

2)   Teacher should motivate students to take active participation in learning process.

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