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Guided Discovery Method A Remedial Measure In Mathematics



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INTRODUCTION:

In this era of science and technology all most all vacations have been dominated by the knowledge and skill of science and technology. Mathematics helps to learn this skill and has earned a valuable place in one's life. It is believed that the study of Mathematics in the school develops intellectual habits and power in the students. Mathematics is exact true and to the point and therefore it creates a discipline the mind. It is thought in the right sense develops reasoning and thinking power more and demands less from memory. Its study relates on the development of power rather than the acquisition of knowledge which comes as a natural consequence. It trains or disciplines the mind and develops reasoning power.

Successful teachers exhibited patters of asking questions, giving directions, soliciting initiated pupil talk, sustained teacher-initiated pupil task, flexibility and teacher talk according to normal expectations popular teachers distinguished themselves as more out going intelligent emotionally more stable sober conscientious venture some, tough minded, shrewd placid controlled and relaxed they were high on theoretical and practical and low on aesthetic value. The need today is for more effective study of the actual teaching and learning situations. The students in education should be given more time to master thoroughly the fundamental concepts of Mathematics and to become acquainted with best literature in the field.

Teaching skills which were involved in the teaching of Mathematics at the secondary school level as skill of developing a concept, skill of applying the inductive and deductive approach skill of figure drawing and skill of applying the problem solving approach sophistication is essential in teaching and learning or in a various aspects of curriculum planning. To begin with a redefinition of concerned terms, concepts etc, seems a logic necessity in ensuring indigenous, contribution to the development of educationally oriented theory of teaching learning of mathematics. One of the methods that can develop logical thinking and creative thinking abilities among pupils is Guided Discovery Method.

Here an attempt is made to prepare and teach secondary school mathematics (9th STD) using Guided Discovery Method.

REMEDIATION:

When the basis of student's difficulty is understood, we come to the stage of applying remedial measures. There is, however, no shortcut formula for remediation. Moreover, since each subject has its own genius and personality, remedial programme will be planned according. To improve the student's achievement remedial strategies are very important. Used remedial strategies should be suitable for learner and it should be applicable to other topics in the classroom situations.

GUIDED DISCOVERY METHOD:

Guided discovery conjoins two strategies-self-paced learning and group work-in an effort to make learning more efficient for all students. The carefully structured problem sequence in guided discovery is designed to carry students step by manageable step through the material, so that they construct the mathematical concepts in a cyclical "bottom up" approach, instead of receiving it in the "top down" lecture method (and then hoping to deconstruct and understand by solving problems). Guided discovery may require more or less time than the third, expository instruction, depending on the task, but tends to result in better long term retention and transfer. Guided discovery both encourages learners to search actively for how to apply rules and makes sure that the learner comes into contact with the rule to be learned

DEVELOPING LESSON PLANS:

It was good experience to develop lesson plan on pupil-centered method of teaching i.e. Guided Discovery Method. The investigator developed two sets of lesson plans 1) For traditional teaching using the following steps-Motivation, Statement of Aim, Development, Recapitulation, Evaluation, Homework. 2) Through Guided Discovery Method. In developing the lesson plan the investigator had taken into consideration the entering behavior students, content, structure. The following steps of lesson planning were adopted as given by Carin and Surd (1981). These

steps are 1) Statement of the problem. 2) Previous knowledge. 3) Concept to be developed. 4) Specific objectives. 5) Teaching aids. 6) Presentation. 7) Questions of Discussion. 8) Investigative activities of students. 9) Observation table made by the students. 10) Generalization. 11) Open questions. 12) Teacher activity.

OBJECTIVES:

1) To construct lesson plan using Guided discovery method in Mathematics. 2) To study the relative effectiveness of Traditional method and Guided discovery method in Mathematics at 1Xth STD.

HYPOTHESIS OF THE STUDY:

1) There is no significant difference between pre test scores of traditional method and guided discovery method. 2) There is no significant difference between post test scores of traditional method and guided discovery method. 3) There is no difference between gain percentage of pre and post means of traditional and guided discovery method.

METHODOLOGY OF THE STUDY:

Pre test, Post test design after traditional and guided discovery method was adopted in the conduct of experiment. 54 Students studying in 1Xth STD of PDJ high School of Bijapur city were selected as sample for conducting the study.

ANALYSIS OF THE DATA:

The investigator analyzed the collected data using t test and gain percentage.

Table 1. Pre Test Mean, S D, and t values of Traditional method and Guided discovery method.

Traditional method (control group)		Guided discovery method (experimental group)		t value
Pre test mean	S D	Pre test mean	S D	
40.31	9.33	44.69	7.09	1.82

The obtained t value is less than table t value i.e. 2.011 at 0.05 levels. There is no significant difference in the

Table 2. Post Test Mean, S D and t values of Traditional method and Guided discovery method.

Traditional method (control group)		Guided discovery method (experimental group)		t value
Post test mean	S D	Post test mean	S D	
75.31	7.63	84.12	4.10	4.84

performance of students in mathematics, in the pre test scores of traditional method and guided discovery method.

Table 3. Gain percentage of Traditional method and Guided discovery method.

Traditional method		Gain%	Guided discovery method		Gain%
Pre Test Mean	Post Test Mean		Pre Test Mean	Post Test Mean	
40.31	75.31	58.63	44.69	84.12	71.29

The obtained t value is greater than table t value i.e. 2.011 at 0.05 levels. There is a significant difference in the performance of students in mathematics, in the post test scores of traditional method and guided discovery method.

This shows that gain percentage for total scores of Guided discovery method is higher than Traditional method. The post test performance indicates the students learn better through Guided discovery method.

CONCLUSION:

The present study has successfully fulfilled the objectives set up. This would enable the teachers to teach mathematics using different and suitable method. The present study offers an opportunity to provide a new experience to students in developing creative thinking abilities. These experiences progressively enlarge the student's horizon through the introduction to a new method adding to their sense of pleasurable achievement in Mathematics.

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