



Effectiveness of Technology Based Teaching in Mathematics among VIIIth Standard Students

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Abstract

Multimedia is fast emerging as a basic skill that will be as important to life in the twenty-first century as reading is now. The multimedia is important to the educators using multimedia to bring into their classrooms real-world examples to provide a contextual framework important for learning. To learn the mathematics subject there are many means and sources of learning. Learning is facilitated by their major factors. They are, the ability to learn, will to learn and the method of learning. As the education is a light that shows the mankind the right direction to surge. The purpose of this research is to evaluation the teaching methods of traditional methods as well as teaching through using technology. The objectives are i. To show the effectiveness of teaching through PowerPoint presentation mathematics teaching in achievement of the child, ii. To know the difference between teaching through traditional method and technology based method, iii. To know the difference in achievement level of students when multimedia or technology is used, iv. To know how many teachers are using this method in teaching the Mathematics, v. To know the level of understanding of student when teaching done through power point presentation, vi. To know the interest of student when the PowerPoint presentation method used in Mathematics teaching. The experimental design was post test-experimental design in those design- two equivalent groups, design was used. The present study contains 50 samples here the researcher selected 25 traditional students and 25 for technology based teaching method (PowerPoint presentation) are of VIII standard. The major results of the study is that there is significant difference between traditional method and technology based teaching Mathematics.

Key words- *Technology based teaching, Mathematics, Students*

INTRODUCTION

Education is not the amount of information that is put into your brain and runs riot there, undigested, all your life. We must have life building, man-making assimilation of ideas. If you have assimilated five ideas and made them your life and character, you have more education than man who has got by hear a whole library -**Swami Vivekananda**. A well educated person is able to meet the conflicting challenges and tide overall the difficulties which confront him in his day to day living. The education policies brought many changes in the field of education. Several disciplines are emerged. The 1986 education policy recommended to the Govt. that, the mathematics subject should be taught from primary school only and at the high School stage the mathematics is mainly divided in to three parts Arithmetic, Algebra and Geometry. To learn the mathematics subject there are many means and sources of learning. Learning is facilitated by their major factors. They are, the ability to learn, will to learn and the method of learning. As the education is a light that shows the mankind the right direction to surge. The purpose of this research is to evaluation the teaching methods of traditional methods as well as teaching through using technology.

The mathematics subject is included at school level to know the students various concept included in the mathematics. To develop reasoning, mathematic attitude, aesthetic sense, skill, interest in mathematics and for better living. Mathematics plays an important role to develop the skills in the students. Gradually Mathematics gains more importance many researches are also conducted in this field. Different teaching methods are employed to teach the mathematics more effectively even though different teaching methods are there to teach math's. The math's classes are usually still based on "traditional methods of teaching" due to teachers who are not having the knowledge of using the multimedia. But these traditional methods are not meeting the needs of students. So the use of technology is necessary to meet the needs.

Aims and Objectives of Teaching Mathematics:

There are certain philosophers that suggest how we should live over lives. We have adapted a democratic way of life and our education should prove to be an instrument to achieve our individual and social aims. Every subject, taught in the school has some objectives of its teaching. Teaching of Mathematics has also certain aims and objectives for which it is taught in the schools. They are as follows:

- Knowledge is the one of the major aims of teaching mathematics, it imparts the knowledge of recall and recognizing of concepts in the mathematics.
- Know the facts and principles of mathematics and its applications, consistent with the stage of cognitive development.
- To acquire the skills and understanding the methods and process that lead to generation and validation of scientific knowledge.
- Relate to the environmental, local as well as global and appreciate the issues at the interface of Mathematics technology and society.
- Acquire the requisite theoretical knowledge and practical technological skills to enter the world of work.
- To nature the natural curiosity, aesthetic sense and creativity in Science and technology.
- Imbibe the values of honesty, integrity, co-operation, concern for life and preservation of environment.
- To acquaint pupils with the broad outline of great scientific principles and the ways in which these are exemplified and applied in the service of man.

Different Methods of Teaching Mathematics:

It is essential that a teacher should be acquainted with various methods of teaching in order to achieve the set aims and objectives of teaching a subject. At secondary level there are many methods of teaching Mathematics like Lecture Method, Play way Method, Inductive-Deductive Method, Heuristic Method, Project method, Seminar method, Demonstrative method, Demonstration using technology, Scientific method, Problem solving method. The present study highlights the demonstration method using the technology.

Need and Importance of Multimedia in Teaching

Multimedia is fast emerging as a basic skill that will be as important to life in the twenty-first century as reading is now. Instead of limiting you to the linear presentation of text as printed in books, multimedia serve as triggers the reader can use to expand the text in order to learn more about a topic. This is accomplished not only by providing more text but by bringing it to life with sound, pictures, music, and video. Fuelling this growth are advances in technology and price wars that have dramatically lowered the cost of multimedia computers. The multimedia is important to the educators using multimedia to bring into their classrooms real-world examples to provide a contextual framework important for learning. Multimedia and tools like the internet

give Faculty instants access to mullions of resources. These materials can be called up instantly for cooperative learning, critical thinking, discussion, problem solving, and self-study. Extending the use of multimedia learning resources to the home represents on educational opportunity with the potential to improve student learning. This study is needed to know the difference between technologies based teaching and how the students' academic achievement is related to teaching method.

Scope of the study:

The present study includes the effectiveness technology of teaching through traditional and technology based teaching methods on Academic achievement in mathematics of VIIIth standard students in HD Kote village of chitradurga district.

Statement of the problem:

The problem of the present study is entitled as “**Effectiveness of technology based teaching in mathematics among VIIIth standard students**”.

Objectives of the study:

The present study has following objectives:

- To show the effectiveness of teaching through PowerPoint presentation mathematics teaching in achievement of the child.
- To know the difference between teaching through traditional method and technology based method.
- To know the difference in achievement level of students when multimedia or technology is used.
- To know how many teachers are using this method in teaching the Mathematics?
- To know the level of understanding of student when teaching done through power point presentation.
- To know the interest of student when the PowerPoint presentation method used in Mathematics teaching.

Variables of the study:

- **Independent variable** : Effectiveness of teaching through technology based and traditional methods.

- **Dependent variable** : Academic achievement in Mathematics.
- **Moderate variable** : Boys and girls.

Hypothesis of the study :

- There is no significance difference between technology based teaching method and traditional method .

METHODOLOGY

In the present study, the researcher evaluates the effectiveness of technology method of teaching over traditional method of teaching Mathematics, on academic achievement of VIII standard students. Therefore the researcher adopted experimental method of research. The experimental design was post test-experimental design in those design- two equivalent groups, design was used.

Sample

In the present study, the researcher adapted the random sampling technique. The population consist of students studying VIII standard of HD kote village of chitradurga city. The researcher selected one kannada and medium high schools in HD kote village of chitradurga city by randomly. The present study contains 50 samples here the researcher selected 25 traditional students and 25 for technology based teaching method (PowerPoint presentation) are of VIII standard.

Tools For Collection of Data

1. PowerPoint presentation materials about Geometry.
2. Post- test in Mathematics.

Research tool was “Questionnaire”. This research tool was constructed by the researcher. This research tool consists of closed form of questions.

Construction of Post- Test in Mathematics For VIII Standard Students:

To meet the objectives i.e. to construct a post- test in Mathematics on the topic “Geometry” for VIII standard students, researcher constructed a post test. The text book prescribed by the government of Karnataka was used for the construction of post-test. The test items were selected

in such a way to test the student's knowledge about the topic. The selection of the items was made by consulting the Mathematics teachers to know the difficulty level of the students. The following steps were followed in the preparation of the post test.

1. Specification of the objectives.
2. Decision of the weight age to be given to different type of objectives.
3. Writing items.

1) Specification of the objectives:-

The objectives specified were knowledge, comprehensions skills, application type and understanding.

2) Decision of the weight age to be given to different type of objectives:-

Equal weightage was given to the knowledge, comprehension, understanding, skill and application equal weightage given to the whole topic.

3) Writing items:-

60 questions were selected in the topic **Geometry**. The topics under study were construction of triangles, the sample test paper was given to four mathematics teachers teaching for 8th standard to check whether the items were to the level of difficulty of the children and also to see whether the content of the topics covers equally i.e to establish content validity. The teacher's opinion revealed that all 60 items were appropriate and according to the level of students and the content was covered equally on all the sub topics.

Hence all the 60 items were retained in the post-test. The post test. The post test in mathematics is given in the appendix.

Collection of Data:

The researcher sought the permission to administrator the tool from the head of the institution. Then enter in to the class room with necessary preparation and introduced his for what purpose researcher came there. The researcher as taught the lesson cleared all the doubts when it raised testing tool was give and asked the students to answer them the good relationship was there between students and teacher. After the reaching the pupils were provided with question papers which consisted 60 constructed questions about triangle. The students were allowed to draw the figures for questions. And proper care as taken to prevent any copying. The answer sheets were collected after that time given was over, 60 minutes of duration was given to

the scoring key each correct responses is given 5 marks and total correct responses represents the total score of each students on post-test in maths and post test scores are tabulated the tabulation of the post test scores obtained by both experimental group and control group.

Analysis of data:

Hypothesis 1: There is no significance difference between technology based teaching method and traditional method.

Table 4.1: Showing mean, standard deviation and t value of traditional method and technology based teaching method.

Scores	Mean	SD	t value	Significance 0.05
Traditional	37.12	6.32	3.55	2.01
Academic achievement	56.24	4.51		

Interpretation : The above the table reveals that the obtained t values is 3.55 which is greater than table value of 2.01 at 0.05 level . the obtained t value was found to be significant. The null hypothesis is rejected and alternative hypothesis accepted. From this it can be concluded that “There is no significance difference between technology based teaching method and traditional method of teaching” in mathematics .

Construction of Post- Test in Mathematics:

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Findings of the study:

There is significant difference between traditional method and technology based teaching Mathematics.

Educational Implications:

Multimedia method of teaching helps the student to understand better.

The active participation of students in learning can be observed.

The teachers can use this method of teaching(multimedia method) for all standards of students.

The present study is carried on in private schools but not in government schools.

Suggestions for Further Research:

A similar / same method can be adopted for all standard students and for primary, higher primary and higher school students.

A competitive study can be carried out with the government and private schools.

A comparative study between rural and urban schools students can be conducted.

This method can be adopted for higher level students also.

A survey on the usage of multimedia in schools can be conducted.

The same Study can be conducted in other subjects also.

Same programmes can be developed to Kannada medium students also.

Limitation of the study:

- The study was limited to only four schools of Davanagere city.
- The study was limited to English medium only.
- The study was limited to only one sub unit in Mathematics subject only.
- The present study is based on the results obtained by 200 students of IX standard only.

CONCLUSION

The present study is focused on effectiveness of multimedia method and traditional method on the VII standard students. The result/outcome of this study is the multimedia method teaching is more effective than traditional method of teaching. This method increases the interest of students to learn multimedia method of teaching can be used effectively in improving the academic achievement of students in Mathematics subject by using this multimedia method of teaching the interest and scientific attitude can be developed among pupils. the subject and it is effective in improving achievement of the students in Mathematics subject. This we can say by the analysis of this study. Hence measures have to be taken by educationalist, administrators to adopt this method i.e. multimedia method of teaching to high school, primary school, higher primary schools.

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