



# Effectiveness of Teaching through Special Techniques Japanize Multiplication, Selection of Digit of Unit and Percentage for the Selected Units of Mathematics Subject of Standard - VI

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## 1. Introduction

Process of education going from historical times, which emphasis on schooling. Education provided to the children based on educational purposes in the education system. Different topics for education were emphasized by our teacher thinkers such as Gandhi's federal education, activist education by naturalists, education for what the realists are. Thus educationists have emphasized different subject matter content of education. If we think about education methods in the present time, there is a lot of change in education. The current era is about technology. In which the child can learn more and more using technique and technology. Project methods, interactive learning, self-Research, etc educational methods and techniques are more interesting and useful to the child than traditional teaching methods.

## 2. Rational of the Research

Among the various subjects in our education, mathematics and science technology topics are also important. Generally, Mathematics is a subject that every individual uses in his or her daily practice life. Mathematical gate way of all science. The mathematical subject develops logic among the children. So it is important that the importance of the teaching mathematics as subject in the classroom need to way teaching through more effective way and techniques. Generally mathematics subject is taught by teachers with traditional methods of teaching of mathematics, which often cannot be remembered for long to students and sometimes it becomes uninteresting for the students. Mathematics as the subject is the difficult for the students for everyday practice with lots of formula and definite concepts. In this concern there is need to make a mathematics easy for the students, so that it becomes interesting and student's takes part in learning. In this present research researcher made experimental design to study the effectiveness of teaching through special techniques for the selected units of mathematics subject of standard - VI.

## 3. Statement of the Problem

In the present Research, researcher has attempted to examine the effectiveness of teaching two groups, traditional and experimental, through the experiment of specific techniques for a selected unit of mathematics subjects in standard-VI. In present study, the teaching method is an independent variable, while the academic score of mathematics is taken as a dependent variable. Gender, Habitat and Type of experiment are considered as the dependent variables. Effectiveness of teaching through special techniques for the selected units of mathematics subject of standard – VI.

## 4. Objectives of the Research

The objectives of the Research presented are as follows.

1. To construct a pre- test for the selection of the special techniques for selected units in Mathematics of standard-VI for experimentation.
2. To construct a pre- test for the selection of the special techniques for selected units in Mathematics of standard-VI.

3. To study the effect of the special techniques for selected units in Mathematics of standard-VI for experimentation on control group with reference to gender and habitat.
4. To study the effect of the special techniques for selected units in Mathematics of standard-VI for experimentation on experimental group with reference to gender and habitat.
5. To compare the effectiveness of special techniques for selected units in Mathematics of standard-VI for experimentation on experimental and control group with reference to gender and habitat.

#### 4. Operational definitions of the terms

Here is an explanation of the technical terms of the Research presented.

##### 4.1 Standard IV

The meaning of the standard in the Bhagavadvammandal is as follows.

"The standard is the fixed way of doing some work, the system, the administration."

The Research presented includes standard-VI to completion of standard-VI which is included in the education structure of the state of Gujarat in higher education: Gandhinagar

##### 4.2 Mathematics Subject

Mathematics subject in the Research presented is the textbook of Mathematics subject from standard-VI, which contains various computations which are published in the Gujarat Academic Research and Training Council, Gandhinagar. Which includes the following units, are Addition, subtraction, multiplication, divide, mix, Perimeter and area, Percent, Exponential and exponential.

##### 4.3 Selected units

Some of the units of mathematics subject to standard-VI in the Research presented units are selected units such as multiplication, percentages, squares, etc.

Exclusive practice is a practice that is somewhat innovative than the traditional practice that follows.

- Multiply by line
- Multiply by a square
- To find the square root
- To find the percent
- To find the extension

##### 4.4 Teaching Methods

Teaching is a series of learning experiences that are intended to bring about expected behavior change in the context of different subject learning objectives. Teaching selected units in specific Research by specialized practitioners. In this present study treatment of traditional method applied to the control group and treatment of the special mathematical techniques in mathematics subject programme given to the experimental group are considered as the teaching methods.

##### 4.5 Effectiveness

It shows a good impression of something or a bad impression. In the Research presented, the controlled group and the experimental group have accepted the meaningful difference of the achievement of the academic achievement of mathematics subjects obtained in the Post-Test as an effectiveness of that method.

#### 5. Variables

The location of variables is important in Research. It is also essential to understand the concept of variables in experimental Research. A variable is a trait or an attribute whose value may change. A variable is an objective value that is a constituent that is consecutively or is different in distinct cases. The variable that is allotted a value is any trait of the individual set or environment that can be altered. Identifying and functional defining the variables enclosed in the Research. Research is the crucial to the Research process. A variable is a characteristic that can have altered values. The variable is the aggregate whose rates are constantly changing. A variable is a piece that discriminates individuals

conferring to their set and setting. Illustrations of variables such as period, gender, habitat, attitude, achievement, class etc.

**Table 1: Variables of the Research of Special mathematical techniques in mathematics subject**

No	Type of Variable	Variable	Level	Category
1	Dependent	Special mathematical techniques in mathematics subject		
2	Independent	Educational Group	2	<ul style="list-style-type: none"> <li>●Control</li> <li>●Experimental</li> </ul>
3	Independent	Gender	2	<ul style="list-style-type: none"> <li>●Male</li> <li>●Female</li> </ul>
4	Independent	Habitat	2	<ul style="list-style-type: none"> <li>●Rural</li> <li>●Urban</li> </ul>

## 6. Hypothesis of the study

Hypothesis of the study are given as follows.

- H<sub>01</sub>** There will be no significant difference between mean score of the control group and experimental group total students on the pre-test of achievement test based on the special mathematical techniques in mathematics subject programme.
- H<sub>02</sub>** There will be no significant difference between mean score of the control group and experimental group male students on the pre-test of achievement test based on the special mathematical techniques in mathematics subject programme.
- H<sub>03</sub>** There will be no significant difference between mean score of the control group and experimental group total students on the post-test of achievement test based on the Japanize Multiplication special mathematical techniques in mathematics subject programme.
- H<sub>04</sub>** There will be no significant difference between mean score of the control group and experimental group male students on the post-test of achievement test based on the Japanize Multiplication special mathematical techniques in mathematics subject programme.
- H<sub>05</sub>** There will be no significant difference between mean score of the control group and experimental group total students on the post-test of achievement test based on the Selection of digit of unit special mathematical techniques in mathematics subject programme.
- H<sub>06</sub>** There will be no significant difference between mean score of the control group and experimental group male students on the post-test of achievement test based on the Selection of digit of unit special mathematical techniques in mathematics subject programme.
- H<sub>07</sub>** There will be no significant difference between mean score of the control group and experimental group total students on the post-test of achievement test based on the calculation of percentage special mathematical techniques in mathematics subject programme.
- H<sub>08</sub>** There will be no significant difference between mean score of the control group and experimental group male students on the post-test of achievement test based on the calculation of percentage special mathematical techniques in mathematics subject programme.

## 7. Research area

The present Research covers the field of upper elementary education, as it is measuring the academic syllabus of mathematics subjects of students of standard-VI. Mathematics is covering the field of education as students are study mathematics education. Also, because of the use of specific practical special techniques and skills present research is the considered in teaching methodology. Mathematical syllabus also considered in the field of the measurement and evaluation field.

## 8. Research Type

Present research was original, special and practical in nature. In present study, the research objective to conduct an experiment in which the quantitative analysis necessary to investigate the effectiveness of

the children's academic education in mathematics by traditional methods and special mathematical techniques in mathematics subject programme.

### 9. Importance of Research:

The importance of the presented Research is as follows.

- Knowledge of how specific practices can be obtained through the special mathematical techniques in mathematics subject programme.
- In the future, in their teaching work, teachers will be encouraged to use these skills for other units for special mathematical techniques in mathematics subject programme.
- These units will be useful to teachers for their own teaching work used in study.
- Students will find it useful in self-study for the units taught by specialized practitioners for special mathematical techniques in mathematics subject programme.

### 10. Limitations of the Research

The limitations of the present research are as follows.

The Research presented is limited to the upper primary school students of Gujarati medium.

A limited school in Mehsana taluka is sufficient for this Research.

The Research presented is limited to selected units such as addition, substations, multiplication, percent, profit-loss, area from units of Mathematics of Class:VI.

### 11. Research Methods

Research methodology becomes an experimental Research methodology as it is used to test the effectiveness of teaching through the experimental program for specific practitioners in the presented Research. In this present Research is survey type in nature.

### 12. Population and sample of Research

Population "Population included means all conceivable defendants while a part of the culture in which the research has admittance. In the allied rural and urban area and Gujarati medium schools in the urban area were included students Research in standard-VI were selected as the population of the Research from the Mehsana block from the Mehsana district during the year of 2018-2019.

### 13. Sample selection

Sample selected in interpretation of the achievement test chosen by Researcher from all over the population called sample of the Research. In the educational Research sampling is taken care to save resources like in view of the limits of time, influence and currency among the innumerable methods of sample selection for the present Research. In this present Research selected sample of the students Researching in Standard-VI in the rural area and urban habitat I Gujarati medium schools belonging to Gujarati Primary Education in Mehsana districts of North Gujarat and urban area in the rural habitat. In this present Research group equaliance method is used selection of the sample from the two schools, pair according to percentage of the students control and experimental group selected for the present Research.

**Table 3: Sample of the study**

Name of school		Experimental Group		Control group		Total
		Experimental		Traditional		
		Male	Female	Male	Female	
Primary school Dediyan	Rural	14	16	17	14	30+31
Primary school 5 Mehsana	Urban	11	19	16	15	30+31
Total		25	35	33	29	122
		60		62		122

In this present study two schools were selected named as (1) Primary school Dediyanan from the rural habitat and (2) Primary school 5 Mehsana from the urban habitat of the Mehsana Block. In each school two group like as control and experimental group were made for the experimentation. Pre-test and post-test conducted.

#### **14. Experimentation of the programme**

After the selection of the school, marks of the of the last examination selected as the pre-test and according to their marks group equaling formulated as the control group and experimental group. Two group like as control and experimental group were made for the experimentation. Pre-test and post-test conducted. Experimental group applied Special mathematical techniques in mathematics subject for the 24 days while Traditional applied 24 days.

#### **15. Instruments of the Research**

In this current Research two Instruments were used for data collection.

(1)Special mathematical techniques in mathematics subject achievement test Standard VI of Gujarati medium school in Gujarati medium used as the Instrument of the Research.

(2)Score in the earlier examination are taken to checked validity of the Instruments with Special mathematical techniques in mathematics subject achievement test.

#### **16. Construction of the Instruments**

In this present Research Special mathematical techniques in mathematics subject achievement test is prepared according to the achievement Method. Finally item analysis carried out and with pre-test and posttest of control and experimental group were taken in the Special mathematical techniques in mathematics subject achievement test.

#### **17. Data collection**

Special mathematical techniques in mathematics subject achievement test was administrated after finalization of control and experimental schools of the experimentation. According to the experiment group equivalent random sampling techniques used for the selection of the schools by using Lottery system and students from the schools were selected for the selection of the level of the students on the performance of their examination score, so that group of the school will be same equivalent for the experimentation purpose as per the urban habitat and rural habitat primary schools with the medium schools belonging to Gujarati Primary Education from the block of the Mehsana district of North Gujarat region. Selection of the primary school were made contact for pre-permission first of the principals of the Primary schools students from Standard-VI from Gujarati medium schools. Total 122 students were selected for experimentation. Special mathematical techniques in mathematics subject achievement test administrated on the sample of the two Primary school students, finally Special mathematical techniques in mathematics subject achievement test checked and adequate total 122 students were selected for the data analysis.

#### **18. Data Analysis**

Special mathematical techniques in mathematics subject achievement test administrated on the sample of the Primary school students of Gujarati Primary Education in Primary schools students from Standard-VI from Gujarati medium schools. Score on the Special mathematical techniques in mathematics subject achievement test tabulated and according to experimentation, pre-test, post-test, gender, habitat and standard of the students were arranged. Statistical technique of quantitative data analysis applied and mean, median, mode, standard deviation, quartile deviation, percentile, skewness, kurtosis, t-value and correlation calculated. Reliability and validity tests also applied to the Instrument

#### **19. Findings of the Research**

To define the problem in the Research, prepare the test plan, simulate the simulation of the actual data, for this purpose, collect real data, analyze its detailed numerical details, and analyze it. The

achievements obtained by the 122 students were selected as sample in this Research are the basic details of this Research.

### **Effect of pre-test score on special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students**

There is no significant difference found between achievement based on the pre-test score on special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students with reference to group of students of total, male, female, rural habitat and urban habitat students. Gender-wise there is no any significant difference found between mean score of male and female students, same as habitat-wise there is no any significant difference found between mean score of rural habitat and urban habitat students. Hence it can be said that there is effect of the experimental group found on the pre-test score on special mathematical techniques in mathematics subject programme, same there is no any effect of gender and habitat found on the pre-test score on special mathematical techniques in mathematics subject programme.

### **Effect of post-test score on Japanize Multiplication special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students**

There is significant difference found between achievement based on the post-test score on Japanize Multiplication special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students with reference to group of students of total, male, female, rural habitat and urban habitat students. Gender-wise there is no any significant difference found between mean score of male and female students, same as habitat-wise there is no any significant difference found between mean score of rural habitat and urban habitat students. Hence it can be said that there is effect of the experimental group found on the post-test score on Japanize Multiplication special mathematical techniques in mathematics subject programme with comparison of the control group, while there is no any effect of gender and habitat found on the post-test score on Japanize Multiplication special mathematical techniques in mathematics subject programme.

### **Effect of post-test score on calculation of percentage special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students**

There is significant difference found between achievement based on the post-test score on calculation of percentage special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students with reference to group of students of total, male, female, rural habitat and urban habitat students. Gender-wise there is no any significant difference found between mean score of male and female students, same as habitat-wise there is no any significant difference found between mean score of rural habitat and urban habitat students. Hence it can be said that there is effect of the experimental group found on the post-test score on calculation of percentage special mathematical techniques in mathematics subject programme with comparison of the control group, while there is no any effect of gender and habitat found on the post-test score on calculation of percentage special mathematical techniques in mathematics subject programme.

### **Effect of post-test score on selection of digit of unit special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students**

There is significant difference found between achievement based on the post-test score on selection of digit of unit special mathematical techniques in mathematics subject programme with reference to control group students and experimental group of students with reference to group of students of total, male, female, rural habitat and urban habitat students. Gender-wise there is no any significant difference found between mean score of male and female students, same as habitat-wise there is no any significant difference found between mean score of rural habitat and urban habitat students. Hence it can be said that there is effect of the experimental group found on the post-test score on selection of digit of unit special mathematical techniques in mathematics subject programme with comparison of the control group, while there is no any effect of gender and habitat found on the post-test score on selection of digit of unit special mathematical techniques in mathematics subject programme.

## 20. Discussion

From the findings of the present Research, it can be said that today, when there is referencing knowledge in the mathematical classroom education innovation program. The results of this Research are alarming. The knowledge presented in the present mathematical Research has found Special mathematical techniques in mathematics subject to be more effective on the variable of the experimentation with comparison to the variable of the gender and habitat, which recommends that other strategies, such as enriching education, are important. Equally important is the status Special mathematical techniques in mathematics subject achievement test. Thus, no one can take the place of teacher in education. But the teacher will have to be equipped with different positioning standards, tactics Instruments. Various educational Instruments are helpful for the teacher. Thus, even if any positional Special mathematical techniques in mathematics subject is used for pedagogy, the teacher must engage in his or her position of Special mathematical techniques in mathematics subject. In a live communication process like teaching, information is exchanged between the living beings on both sides of the thoughts and emotions of Special mathematical techniques in mathematics subject. It makes students thinking with more stability. Thus, if such a development Special mathematical techniques in mathematics subject program is implemented as a teacher-assisted form, good results can be obtained.

## References

1. Acharya, M. (2008). Methods of Research in education. Ahmedabad: Character Blocks.
2. Amin, G. (2007). Shri Gyaneshwari Bhagavad Gita. Ahmedabad: Cheap Literature Extension Office.
3. Asthur. (1980). Tests Measurement and Evaluation California: A Dev Approach Admission Westory Company.
4. Barot, D. M. (1970). Special mathematical techniques in mathematics subject Vivechnatamak Tika of Shri Bhanuvijayji Mahraj, Navagivan press, Ahmedabad
5. Best, J.W. & Kahn, J. (2004). Research in Education. Prentice Hall of India Pvt. Ltd., New Delhi.
6. Chandra, S.S. & Sharma, R.K. (2002). Research in Education. Atlantic Publishers, New Delhi.
7. Dave, Dharmesh (2009). Vedic Ganit. Navneet publication (India) Ltd., Ahmedabad.
8. Garrett, E.H. & Woodworth R.S.(1981). Statistics in Psychology and Education. Vakils, Feffer and Simons Ltd.
9. Gay, L.R. (1992). Educational Research Competencies for Analysis and Application. 4<sup>th</sup> Edi. Macmillan Publishing Company, New York.
10. Koul, Lokesh(1997). Methodology of Educational Research (3<sup>rd</sup> Ed.). New Delhi: Vikas Publishing House Pvt. Ltd.
11. Mangal, S.K. (2005). Statistics in Psychology and Education. 2<sup>nd</sup> Edi. Prentice Hall of India Pvt. Ltd., New Delhi.
12. Singh, B. (1986). Bhagavad Gomanda. Reprint, Part-1, Rajkot: Praveen Publications.
13. Uchat, D.A. (2009). Methodology of Research in Social Sciences and Education. Sahitya Mudranalaya Pvt. Ltd., Ahmedabad.
14. [www.education.com](http://www.education.com)
15. [www.hubpages.com](http://www.hubpages.com)
16. [www.merga.net.au](http://www.merga.net.au)
17. [www.http://ezinearticles.com](http://www.http://ezinearticles.com)
18. [www.http://mastermindvedicmaths.com](http://www.http://mastermindvedicmaths.com)