Chapter -V

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Chapter V

Summary, Findings and Recommendations

5.1 Introduction

This chapter gives an idea about whole research work carried out by the researcher and results obtained by the researcher to have precise information about the work done. After testing the hypothesis, the results are systematically arranged and presented in the form of findings and conclusion. Furthermore, the researcher also gives suggestions to others looking to conduct their research on a similar topic and for further studies based on the result of the present study.

5.2 Research summary

The present study was conducted on the following title.

Effectiveness of Vedic Mathematical Techniques on Achievement of Students in Mathematics at Upper primary level "

5.2.1 Objectives of the study

Following were the general objectives of the present study.

General Objectives

- To test the effectiveness of Vedic Mathematical techniques in Teaching learning Mathematics.
- To test whether the Vedic Mathematical Techniques help students to solve sums in Mathematics.

Specific Objectives

- To compare mean scores of students' Achievement in Mathematics of control group and experimental group on pre-test.
- To compare mean scores of students' Achievement in Mathematics of control group and experimental group on post-test.
- To compare mean scores of Achievement in Mathematics at pre-test and post-test stages of control group students.
- To compare mean scores of Achievement in Mathematics at pre-test and post-test stages of experimental group students

5.2.2 Hypotheses

- ❖ H0 1: There is no significant difference between mean scores of Students' Achievement in Mathematics of control group and experimental group on pre-test.
- ❖ H0 2: There is no significant difference between mean scores of Students' Achievement in Mathematics of control group and experimental group on post-test.
- ❖ H0 3: There is no significant difference in mean scores of Achievement in Mathematics at pre-test and post-test stages of control group Students.
- ❖ H0 4: There is no significant difference in mean scores of Achievement in Mathematics at pre-test and post-test stages of experimental group Students.

5.2.3 Sampling

"The **representative proportion** of the population is called a sample.

The present study was experimental in nature. Researcher purposively selected 60 students of class VII of Baulimani M.E School, Kodagambhira, Bhadrak of Odisha. Where 30 students were selected for experimental group and 30 students were selected for control group.

In the present study, from the available different sampling methods, the researcher has selected the following sampling methods:

- **Purposive Sampling**
- **Random Sampling**

From the above two methods of sample selection, samples were selected easily from the population. In the present study, from 15 Odia medium Upper primary schools of Bhadrak was selected purposively and randomly. School selected for the sample is

- **Baulimani M.E School, Kodagambhira, Bhadrak of Odisha.**

5.2.4 Research Design

Research design is an important part of research. The choice of research design depends upon purpose of the study, the resources available and the kind of data that the problem entails. **Experimental research design** is preferred when the researcher wants to observe the effects of independent variables on the dependent variable within certain controlled situations. In the present study the researcher has used **Quasi-experimental research method.**

5.2.5 Tools

In the present research, researcher used total two research tools to collect data from sample which are as under:

1. Pre – achievement test **(Pre-test)**.

2. Mathematics Achievement test **(Post Test)** .

5.2.6 Procedure of Data Collection

Pre – achievement was considered as covariates in the present study. So the data regarding these variables were required. Hence, after selecting two group's result sheet of Mathematics subject of annual exam of std. 6 was collected from the school principal. After a over view of those result sheets researcher took a pre-achievement test before implementing the programme (Teaching in both method). After implementing the programme, the post test was administered to all the two groups. Both post-test content were same but the instructions are different. After administration of each of the tool, the responses of the subjects of each tool were scored.

5.2.7 Data Analysis

In this study statistical techniques like **Correlated t-test or paired t-test** analysis was used. Other statistical techniques like **Mean, Standard Deviation and Correlation** were used for analysis and interpretation of data. **Degree of freedom (N-1), Normal Probability** i.e No of chances for the null hypothesis to be true **(p), confidence level** i.e 95% where out of 100, 95 chances were there for the null hypothesis is true and only 5 % chances of the null hypothesis is not true due to some errors, **t- value (** obtained and tabular value) are used for interpreting the values of research.

5.3 Findings

- There is **no significant difference** between mean scores of Achievement in mathematics at pre-tests on teaching traditional method and vedic mathematical techniques. Here null hypothesis is accepted at 0.05 level, which indicates that students of both group were having same or nearly same scores before any treatment was given to them.
- There is **significant difference** in mean scores of Achievement in mathematics at post-tests on teaching traditional method and vedic mathematical techniques. Here **failed** to accept null hypothesis . Correlated t-value is 23.961 which is significant at 0.05 level with df= 29 . It indicates that mean scores of Achievement in Mathematics at post-test stages of two groups control group and experimental group differ significantly. Thus, the scores of students taught by vedic mathematical techniques were higher than the students taught by traditional method.
- There is **no significant difference** in mean scores of Achievement in mathematics at pre-test and post-test on teaching traditional method (Control group). Here null

hypothesis is accepted at 0.05 level. It indicates that there is no change in scores at both pre-test and post-test stages of students group taught by traditional method.

- There is **significant difference** in mean scores of Achievement in mathematics at pre-test and post-test stages of group taught Mathematics with using **vedic mathematical techniques**. Here failed to accept null hypothesis . Correlated t-value is **25.164** which is significant at 0.05 level with df= 29 . It indicates that mean scores of Achievement in Mathematics at post-test stages of two groups control group and experimental group differ significantly. Further, the mean score of Achievement in Mathematics after teaching using Vedic mathematical techniques is **16.60** which is significantly **higher** than Achievement in Mathematics before teaching , whose mean score at Pre-test is 5.30. therefore, be said that Achievement in Mathematics of students improved significantly when taught through ***Vedic Mathematical Techniques.***
- ***Analyzing all on above, researcher found vedic mathematics is more effective than the traditional mathematics.***

5.4 Educational Implications

The present study suggests some educational implications even though there are some limitations can make students more enthusiastic for learning and can increase interest students towards subject like Mathematics.

It will provide motivation to the students for more learning of Vedic Mathematics. The teachers can teach other units of Mathematics subject by Vedic Mathematics. Vedic Mathematics will useful in fast calculation. Some points are discussed below:

- Vedic Mathematics is a very useful technique for teaching mathematics.
- Vedic Mathematics helps the children to learn mathematics in a very efficient way.
- Vedic mathematics helps to save a lot of time of the students.
- Vedic Mathematics arouses interest of students in mathematics.
- Students enjoy learning mathematics which is considered as a boring and dull subject.

Better student-teacher understandings and relationships, better adaptation of teaching-learning, greater satisfaction of student with his learning etc. should be maintained. • More emphasis should be laid on meaningful learning than mechanical learning.

- Finding answers through Vedic mathematics may help to reduce the students' anxiety level.

• Teachers should encourage and help pupils to participate in quiz programmes, exhibitions and other competitive tests related to mathematics.

• Teachers should encourage students to use their leisure time profitably by engaging in activities such as reading books related to Vedic Mathematics, collecting puzzles, solving problems and other such activities

. • Teachers must appreciate the successful activities of their children.

5.5 Recommendation for Future Researches

The present study might have some limitations and though investigator has suggested some direction for future researches on the bases of the limitations of this study.

- The present study was conducted only on Upper Primary School students. Further studies can be conducted with **other group** of sample and also study can be conducted on more schools located at **other different areas.**
- The study was conducted on students' achievement in mathematicsat upper primary level. The study can be conducted on other levels like **Primary, Secondary** and **Higher secondary.**
- A study can be undertaken to know the **opinion of students as well as teachers on including vedic mathematics in school curriculum.**
- In this study, only some selective sutras/ subsutras from vedic mathematics on **multiplication, division, square** and **square root** had been implemented. **Other sutras/subsutras** of vedic mathematics may be taken up for the purpose of study.
- Problems and issues regarding **teaching mathematics** through **vedic mathematical techniques** is an emerging topic to investigate for the present situation.
- The study also can be undertaken by taking larger sample with **survey research design.**

5.6 Conclusion

In this chapter's summary, findings, educational implications and suggestions for future researches are included. The present study has some limitations but if the efforts are made to implement the findings and suggestions then the students will definitely beneficial and that will leads towards easily and interesting in learning Mathematics subject. **On researcher findings it was clearly visible that vedic mathematical techniques are more effective than the traditional mathematics. But it does not mean that vedic mathematics should replace traditional mathematics rather vedic mathematics should include with traditional mathematics. This is because vedic mathematical techniques would work on some selective conditions not on general conditions.**